TEACHING AND ORGANISATION

TEACHING

AND

ORGANISATION

WITH SPECIAL REFERENCE TO SECONDARY SCHOOLS

A MANUAL OF PRACTICE

EDITED BY

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'*The bore of all bores. . . . His subject had no beginning, middle, nor end. It was* EDUCATION.'—(THOMAS LOVE PEACOCK)

'SMITH—*He can write, and read, and cast accompt.*
CADE—*O monstrous!*
SMITH—*We took him setting of boys' copies.*
CADE—*Here's a villain!*'—(SHAKSPEARE)

ADVERTISEMENT

THIS book is an attempt to cover all the ordinary ground of school practice, and is designed to serve as a manual for teachers and for others directly concerned or likely to be concerned in school work. Its plan is frankly empirical. The curriculum commonly followed having been taken as the most reasonable guide to what is best as well as to what is practicable, the several writers have set forth their own methods and experience for the information of others, and from this ground have suggested reforms, large or small, in procedure. If they have on occasion advised readjustments of the accepted values of studies, they have still made no attempt to propound a formula or set of formulas and to deduce therefrom a whole scheme of education. They therefore stand within the danger both of Peacock's contempt and of Jack Cade's dislike.

It has been felt necessary to call into council a large number of teachers, each to deal with a special subject, for two main reasons; in the first place, because where specialists are also teachers, or have daily and intimate acquaintance with the

conditions of teaching, their views may well carry a weight which the specialists alone cannot fairly claim; in the next place, because the field of secondary education, as the term is understood, is so very wide that few persons are competent to judge in detail of the whole of it.

There is, however, substantial agreement amongst us, secured in some cases by reconsideration or concession; but writers are responsible for those chapters only which they have themselves contributed, and for no opinions expressed elsewhere in the book. No form of oath has been administered; and those of us who are still making or watching experiments in teaching and organisation climb back to their stools uncommitted to the words of any other master, neither expecting nor desiring that what has been written should be regarded as more than material for consideration. Where divergences of opinion have been left unreconciled and permitted to stand on record, the interested reader is asked to note that doctors disagree and that the differences are probably worth examining.

One omission should be explained, in justice to readers and contributors alike. Long and anxious thought was given to the question whether or no to include the 'teaching of religion' in our list of subjects to be treated. Both of the chief views—the 'denominational' and the 'undenominational,' as they are called—might have been presented in detail; but it did not seem good to the Editor that in a book intended to help students and young teachers there should be set forth at length contrary opinions on such a subject. Moreover, a teacher in charge of a class will be moved to take the one line or the other by circumstances which a book like this can neither affect nor profitably discuss.

It should be hardly necessary to say that throughout the book, unless special reservations are made, where 'boys' is written, 'boys or girls' is to be read. The Editor does not believe that the essential differences of the sexes as subjects for education can be safely ignored, but he thinks that the common ground is the infinitely larger ground, and that where

variations of treatment are necessary the intelligent teacher will recognise the right time and place for them.

For the useful index and analysis with which readers are furnished the Editor's grateful thanks are due to his friend and former pupil, Mr. F. Roscoe, Master of Method in the Day Training College, Oxford. Other friends who may recognise the results of their own valuable criticism in matter that stands above the Editor's signature will not think his sense of obligation the less because he has been bold enough to make his own balance-sheet less unfavourable to himself by concealing the names of so many creditors.

P. A. Barnett.

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TEACHING AND ORGANISATION

THE CRITERIA IN EDUCATION

What we shall teach, and to whom, is limited in the first place by conditions of economy

At the outset of every endeavour to fix a standard of educational value we must admit the limits set to our field of speculation by conditions of economy. Even kings who were philosophers could not give every man, or even most men, the time and means for the highest self-realisation. The utmost that can be done is to consider fairly how much of opportunity can be bestowed on everyone consistently with admitted inequalities and the conditions of life as we know them, and, afterwards, to consider how much can be provided by the systematisation of teaching and discipline. The time at the disposal of most men for this end is largely determined by the necessity of finding at a comparatively early age a place in the machinery of production. Education, in the narrow sense of directed or suggested activity preceding this, could conceivably do more for any man than it has yet done for any, but we must recognise the fact that for most men the *status pupillaris* is short. Everyone thinks that his education could have been better than it actually was, because some studies that might have been (as he thinks) useful to him have been shouldered out by others that have seemed, in the competition of studies, to be of greater importance. Our standard of value, then, must be fixed with due regard to what is practicable as well as what is best in the preparation of youth for the duties of maturity.

On the concession of this preliminary point much depends. We are warned, first of all, against nursing the notion that school training can ever be made, even in the most favoured cases, final

and adequate; it can only approximate to an ideal; it must be a compromise at best. The pupil does not quit school or college in complete panoply and proof against harm; he gets the use of his harness, as he finds from time to time that many pieces are wanting, on the field of his life in the world. And if this is true of the most favoured case, it is true of the ordinary cases.

Therefore any education can at best be merely an approximation to an ideal

It reminds us also that it is impossible to ignore the necessary and immediate connexion of the school with the bread studies. For though the highest learning, as one is told, may boast that it has no such obvious relation to utility, yet the curriculum of the school, being meant for the general, must needs be constructed on a pattern that has a recognisable bearing on everyday life.

If, however, it can be shown that the pursuit of an immediate utilitarian end is likely to defeat the larger economic purpose; if, in making our curricula too 'practical,' we are also imperilling attainable interests of ultimately greater economic value; then, by the frank admission of the limitations of discussion, we shall gain in another way, for we can meet the rule-of-thumb men on their own ground, and on their own ground defeat them.

Furthermore we secure, by a recognition of these limits, a positive advantage in addition to these negative aids. It will not only tell us what we cannot do; it will also help us to understand the very important truth that since the whole curriculum is intended for persons who will after all enter life with characters still largely unformed, it must be constructed with careful regard to the whole nature of the pupil; that a curriculum must serve some supreme general purpose, even if it has grown as a series of accretions; that no excessively specialised study should dislodge exercises and interests which are necessary for the more general cultivation of the intellect and character.

That we should be clear about this standard is, of course, of the greatest importance. It has always been a subject of engrossing interest to philosophers from Socrates to Herbert Spencer, and the citizens and statesmen who like to be called practical have shown about it a good deal of keenness, and some perversity.

The point of view is everything. We have seen already that we have had to curtail our outlook of possibility to an horizon of which the lines are drawn by conditions of economy, but this must be done with caution. We must be on our guard against the serious error of estimating the value of an education by its power to affect the production and distribution of wealth; that

would be to ascribe to economic conditions and economic purposes a consequence which is excessive. The difficulty and the fallacies attendant lie, of course, in the notion that 'wealth,' in the narrowest economic sense, is the only or even the chief form of 'wealth' in its proper sense of well-being.

There are several ways in which we might arrive at a standard of educational value. We shall probably have good reason for concluding that we actually make use of several, and that to each of these several we must attach a certain weight in the determination of our choice. The standard has at various times, and in different degrees, been prescribed for the teachers either by tradition, or by philosophy, or by the empirical judgment of the man of the world as to what will pay, and pay sooner rather than later.

In practice we use more than one test

Let us consider each of these three.

As for the first, tradition. It is against this that the most heavily shotted guns of all innovators, whether philosophers or men of the world, have been persistently directed, and yet it is really our best guide, as it has been, and is likely to be, our most enduring one; and the man of the world, at least, will be bound to admit its original claim. For tradition in education is like prescription or current morality in ethics. Whatever may be the ultimate philosophic reason or purpose of education or of right conduct, in the main details of both of these the experience of mankind has formed tolerably sound operative judgments, judgments that may not always stand the shocks of the severest and most uncompromising logic, but easy to work by, and conducing, on the whole, to an end not altogether unsatisfactory. That is, men can live good lives, just as they can acquire the knowledge and the intellectual aptitudes necessary for well-being, even if the only guide of their pastors and masters has been custom and convention.

TRADITION

Now what is the basis of educational tradition?

From generation to generation the most successful fathers, we may suppose, have taught their sons the arts by which they have themselves most profited; the sons, again, have profited more than their fathers, and justly boasted *πατέρων μέγ' ἀμείνονες εἶναι.* Each generation has worked out its special modification in existing schemes for the training of youth as the times have seemed to require, and so we have arrived at a body of educational practice no doubt indeterminate, but certainly effectual in securing the

Originally mainly utilitarian, and modified gradually to serve utilitarian ends

well-being of the majority, at all events, of the pupils concerned. And more, the position so gained has given the beneficiary class so long a start economically that even when an educational practice has ceased to be directly effectual to its original end, it has been still maintained as an honorific ornament, a badge of social superiority, and has so conferred on its subjects a reflex, though a very genuine, advantage in the easy possession of what are recognised as graces and accomplishments in social life.

The Greek pirate and the Norse viking lived in greater abundance than any of their contemporaries, and they handed down their arts to their heirs. When their descendants found other and better means of plenishing house and larder, the predatory arts were still held in esteem, though perhaps practised on a different scale. These generations having disappeared, there was still left a kindness for the good old rule, and evidence is not wanting to show that we ourselves have our share of it.

Take the arts of venery. After primitive man had made his first venture on the unresisting shell-fish, we may assume that hunting the wild beast was the nearest means that lay to his hand for the procuring of food, if not clothing. We still maintain the chase in England, not for necessity, and not merely for the undoubted delights that under some circumstances attend it. May it not be fairly said that its persistence and repute are largely prolonged by its attractions as a traditional pleasure of exalted rank? Consider, again, smaller matters—the painful social ceremonies, for instance, that men and women reluctantly face, but with a fearful joy. Are not these often the traces of institutions once in their degree necessary to the fullest life of some period more or less remote, and now maintained as social amenities?

Of course, such arts have their various degrees of permanent utilitarian value. And the immediate utility of an art gives it additional hold as an educational institution. We may even go a step further; we may say that although an ancient art may have no longer any very obviously utilitarian value, yet its extended and long-continued practice and its consequent elaboration give it a hold on society, and with a body of rules, a generally conceded claim. The musical glasses were the harder to kill for this reason; the indiscriminate teaching of pianoforte playing is still harder to scotch for the same.

The arts taught create in turn their own atmosphere

I have defended the traditional practices of education because, partly, of their very elaboration; and it may be objected that such practices very often offend the Froebelian rule against striving for

skill as such. But so long as an activity has some utilitarian bearing, even a reflex one, or so long as it is even capable of affecting the thought and feelings of others by giving pleasure, it answers to the general rule that no effort is entirely wasted so long as it responds to a healthy human desire. It follows that we must not peremptorily throw aside an educational institution as useless because at first sight there is nothing but tradition to justify it, though our business may be to weigh it against others, remembering that prescription is a point greatly in its favour. For prescription shows that it has arisen out of a real need, and that it has created for itself an atmosphere which makes its maintenance in some degree desirable and even necessary. The circularity of the argument is like the institutions with which it is concerned. They are begotten of need, and they create new needs themselves which themselves alone satisfy. To be sure, the arts which tradition includes in a complete education are often of permanently essential importance; and a distinction must be made between those traditional materials of education which are drawn from primitive and abiding needs of human nature and those which arise from artificial and transitory conditions.

Let us leave for the time the contributions made by tradition to educational systems or practices, and pass to the contributions made by the 'practical' persons.

RULE OF THUMB, the basis of tradition

It would seem, first of all, that the practical man has precisely the same original justification as those from whom sprang the beginnings of tradition. He teaches the things which seem to him to be most profitable under existing conditions of economy. Arminius and Caractacus, to say nothing of Nimrod, no doubt regarded war and the chase as the more modern practical man regards commerce; they taught the arts of war and the chase, he teaches shorthand and typewriting. But they had to deal with very simple conditions of society and competition, whereas the scheme of things to which the merchant has to adapt himself is infinitely complicated. May we not assume that, since the fathers of tradition were not perplexed by the endless subdivisions of labour to which time has condemned their descendants, the simple arts taught by them answered therefore more exactly to the general needs of simple human nature? Arminius and Caractacus, in giving their sons a varied and full experience of fighting and hunting, and accustoming them incidentally to hear in song the praises of bravery and craft,

bestowed on them the best education available in that state of society and condition of life to which they were called, an education that we ought therefore to consider liberal. But the merchant (or should we say tradesman?), whom we take as the antitype, would often limit the education which he controls to just those matters that can be made useful in a counting-house or 'on the road,' and cannot be said to be giving the best available. There are whole continents of things known, and known to determine progress and happiness, which his scheme in no wise touches.

And yet, perhaps, on our own showing, time and tradition may succeed in raising shorthand and typewriting to a much higher place in school work than can at present be conceded to them. They may come to be equal in indispensability to the caligraphy which has so long been regarded as one of the three things most needful as the basis of a school education. It would not be hard, however, to show that the practical necessity of caligraphy is no true measure of its educational importance; and the conventional or economical necessity of shorthand will never give it a right to the place more properly occupied by studies more general and formative, and therefore resting on stronger ground psychologically—drawing, for instance. Reading and writing in themselves are rather mechanical aids to education than education proper. A man might even to-day be well educated without them, though he might find himself, for lack of them, reduced to even greater difficulties than Sir Walter Besant's charming Phillis Fleming. They are short cuts, or tools, of the highest time-saving value; and now that man's dominion over nature includes so many things scattered over so immense an area, they are practically indispensable to a full life.

The view which takes immediate profit or expediency as the main reason for including a subject in a curriculum is, probably, responsible for a far larger number of errors than is tradition. The mistakes of tradition must, in some measure, cure themselves. But expediency has led, in particular, to an excessively early specialisation in the case of individuals and of whole classes, and to a very general 'appreciation' of the more concrete studies as against the apparently more abstract, and that on pseudo-scientific grounds.

'Things before words'—at least ambiguous, if not meaningless

No cant is commoner amongst 'educationists' than the maxim that we should educate through things and not words, as if words were not things, or as if ideas were nothing, or as if disputants were always clear themselves whether by 'things' they meant actions or concrete

objects! Its crudest and most pernicious form amongst the amateurs who lightly lay down the law on pedagogy is the extraordinary notion that education begins and ends with 'the senses.'

But there is a real and important controversy between the advocates of an education preponderatingly literary, and an education in which the so-called science subjects occupy the larger ground, and I suggest that though the advocates of science in education have marshalled a host of sufficiently strong arguments on their side to prove the necessity of a large increase in the amount, and a great improvement in the quality of what is taught as 'science' in our schools, their views have on the whole recommended themselves to the large classes affected, to 'the general public,' not because of their pedagogic propriety, but because of their apparently immediate bearing on the power to manipulate the forces of outer nature; not because the study of the experimental sciences is really the largest help towards 'complete living,' but because the applications of laws that can be discovered and (even better) demonstrated by experiment *have filled life with things.*

> The world is so full of a number of things,
> I'm sure we should all be as happy as kings,

says Mr. Stevenson.

The claims of experimental physical science

This claim of experimental science is a very old one. Its right to supreme human interest was, of course, set forth with incomparable force and dignity by the great advocate of Natural Magic. Yet I am constrained to place even the great Bacon on my rule-of-thumb list; he, also, was too eager for immediate profit. But until the discoveries of the great chemists and physicists of these latter days had actually and visibly enlarged the bounds of human power over nature in a way which none could fail to feel, the educators had thought little of including experimental science in their curricula. Most of the innovators have been led by the magnitude of the material results obtained by the application of great laws recently formulated, or by ingenious adaptations of mechanics, into thinking that the physical means and processes of discovery are of at least equal educational importance with the logical processes involved.

That the exclusive or preponderating pursuit of experimental science, so long as it is unmethodised, is an imperfect education, will probably be admitted by us all; for an education of this sort would be a perpetual series of 'object lessons,' a kind of pedagogic diet on odds and ends in irregular doses and at irregular intervals,

But when the processes of discovery come to be applied consecutively, consciously, on the pupil's own initiative, as general laws, applicable not here only but everywhere, we get into a more fruitful field; and it has been argued that, life being so short and the field of knowledge so wide, an education can be made in the right degree at once immediately profitable and formative, even if it is confined to the experimental sciences and the laws concerning their right pursuit, with just such knowledge of other things, say modern languages, as may be ancillary.

We use and must continue to use Tradition and Rule of Thumb till these are proved to be in conflict with ascertained laws of mind and human development

It is, perhaps, from our knowledge of the constitution of the human mind that we must hope to get our most trustworthy sight of the country that we aspire to survey, by whatever means we are to plod our weary way. The traditional view provides us with the results of long experience and with large materials for investigation; rule of thumb has its fair daily claims and must needs be temperately examined, both because it is a large general response from time to time to questions of immediate necessity, and because it must often be based on psychological law not necessarily formulated; but for his final charter the educator must look to the laws of mental and moral development, and the laws that determine the healthy growth of society. The study of ethics and psychology do not and cannot give us the main materials wanted every day for our educational stock. The study of ethics and psychology will explain, justify, and correct the traditional matters and rule-of-thumb methods, but we must in the future, as we have in the past, go to these latter in the first instance; to psychology and ethics again these must go for confirmation, for license. Our curricula, as has been wisely said, strike an average between the philosopher at one end of the scale evolving ideals from his study of human capacity and his conception of the good of the race, and the man of the world at the other end who wants his pocket filled as rapidly as possible. The moral sciences must in regard to education be what theology was once thought to be in relation to every other science; by them we must measure all educational matters and methods. But though they may suggest and correct, we cannot fill the whole, nor even the greater part, of the field from them. The fact is, surely, that tradition and rule of thumb, the processes that have been at work since the world began, are proved by their very spontaneous character to be adaptations of organism to environment; and although the adaptation is in many respects imperfect, it has on

the whole enabled the organism to live and to thrive. We must, indeed, by the help of the material which tradition itself gives us, and under the guidance of science, mend our ways in particulars which seem to need it. And it is quite possible, of course, to know and approve the better way and to follow the worse. Thus, our bodies and our houses have been on the whole fairly well assured by empirical methods against the attack of hostile cosmic forces; yet the ordinary man or woman persistently neglects known laws of health; and our homes are still ill ventilated. Even so Reading, Writing, and Arithmetic, and the rest give us a fair empirical basis for our education, but we need a psychology and an ethics to enforce the claims of other subjects, the 'natural sciences,' for instance, and to determine the relation of each to a whole scheme. This must be done in order to prevent mental and moral distortion or atrophy, and to ascertain the most profitable way of teaching the matters admitted to the curriculum.

PHILOSOPHY

Let me now formulate the grounds of the claim made by philosophy, *i.e.* mental and moral science, to have the final or arbitrating voice in educational questions. They are these: the field of education is mind and character, and psychology and ethics are the sciences which are concerned with mind and character. It may be said that this would seem to require the conclusion that psychology and ethics should decide absolutely matters of education, with no regard either to tradition or experience. I answer that, in the first place, the decision is not in our hands, for tradition and experience do actually command the field; and in the second, just as in matters of health we do not and cannot regulate each moment according to the behest of the hygienist, yet we must go frequently to him for the confirmation of empirical practices and for advice in difficult cases. We can claim for education that it is a deductive science with no greater justice than a physician can make the same claim for medicine.

Comenius, if I remember aright, would have nothing to do with Greek and Latin literature; like St. Augustine in his godly old age, he felt that whereas in his wicked youth he may have loved his Vergil and his Homer for their demoralising selves, the sole advantage he had gained from them was the learning of the beggarly elements, the A B C. Then the pendulum swings again, and generations of scholars and schoolmasters after him have regarded Greek and Latin literature as absolutely all-important. In our own day there has come about a kind of variation in the battle-music. *Abyssus abyssum vocat.* The psychologists denounce one

another, and from this side and that we are continually being told of the vast changes which the new view must cause. It is therefore our business at least to glance at it and to do our best to give it its due, at all events as schoolmasters and in the schoolroom.

The identification of omniscience with perfect goodness is an old achievement of human intelligence, and it may be, I suppose, agreed that there really is some proportionate relation between knowledge and virtue; in an increase of knowledge we certainly have at least a potential increase of virtue. The professedly modern doctrine as laid down by Herbart and his followers claims to secure with the least intrusion of foreign matter the cultivation of five great ethical ideas that are assumed to be at the root of the moral life, simultaneously with that of the minor matters which we usually suppose to be the special charge of the school. Now I do not propose to examine Herbartian ethics or psychology, except to note the claim that they affect, in their relation to educational principle and method, to make Will accord with the discovered order of Nature and to be strictly correlative to a belief in the certainty of the attainment of its object. Will is therefore not wasted in Desire; and belief being another aspect of knowledge, the two are kept closely parallel by the ordination and subordination of ideas in apperception. They will thus result in action; action which is both correct, that is, duly related to the cosmic system, and good, that is, measured, not prodigal, and therefore effectual.

The doctrine of Interest

This is done by inducing the pupil to take *interest* in every step towards the acquisition of knowledge. He is to be led to such mental activity as may, of its own motion, relate every newly acquired idea to every other; he is, in the Herbartian sense, to apperceive it. 'Character-building is will-training; and this in turn is the apperception of ideas.' (De Garmo's 'Herbart,' p. 45.)

Now the great achievement claimed for this theory is that it rejects entirely the 'aggregative' view of the constitution of the human mind, whereas current theories and current practices, whatever their professions may be, proceed on the tacit assumption that the mind is made up of separate faculties, or, at all events, that the mind's various forms of activity can be separately treated and trained. Hence the construction of syllabuses which are supposed to provide for the development of this faculty and then of that, and in this or that order; the result being that the mind is fed on first a surfeit of one food and then on a surfeit of another (as one should

take first the blue, and then the white paper powder in a seidlitz draught), whereas its diet should be carefully compounded, all details being properly related and interesting. And, meantime, in the faulty faculty psychology, the will, which is really most intimately concerned in all these processes, is either to be separately treated or is left to chance. We need more *concentration*.

The practical value of the criticism

There would seem to be a good deal to learn from this criticism We *do* tend to forget the inextricable identity of all phases of mental activity with the mind itself; and our current psychology whereas it might have led us to determine on an all-round cultivation of the mind, has, in effect, by concentrating our attention rather on the variety of its operations, blinded us in practice to the need of treating it and training it as a whole. On the other hand, from the worst errors we have been saved by tradition and convention. There were all-round men before Herbart. The all-round man was not unknown to or undesired of antiquity; and even such an easy-going layman as Horace could appreciate the *totus teres atque rotundus*. Our theory may be chiefly analytic, but our practice is synthetic.

The mind is one

This fact of the oneness of the mind is then of the greatest educational importance, for the mind as thought and knowledge is only another expression for the mind as will and character. The next important step is to recognise the close association of the mind with the body. The partnership is a life-partnership, but it would seem that at the beginning and end of life the lines are closest. At the beginning, in the life of the very young child, it is possible to detect the absolute simultaneity of certain dexterities and physical movements with certain mental developments; and this is the ultimate and sufficient reason for giving the school-training of the very young a preponderatingly manual character. Yet there is nothing absolutely new in this; what is new is that the practice has become conscious, it has been examined, and returns to the school as principle. Some one has rightly said that the mother tabby who twists her tail about for the delight and exercise of her kitten practises kindergarten in the most approved style. Nature has given to all mothers guidance in the form of instincts; the rational teacher turns on himself and applies, in conscious effort, the knowledge he has thus acquired. It may, moreover, be profitably observed that most of the active reformers of education in the past have been busied about the earliest years of childhood. It is then that 'character' is most effectually given to the plastic

material that hardens later. The acquisition of special or 'technical' dexterities comes at a further stage, for these are instruction rather than education, although it is plain enough that the two must perpetually overlap.

It would seem then, in conclusion, that there is evidence to show that tradition in the first place, and expediency in the second, must always supply the main materials of education, must, whether we like it or no, suggest what we shall teach; but that these must be justified by the discovered laws of mental and moral and social development.

Conclusion

There were good people before Socrates, thin people before Mr. Banting, well-educated people before Herbart; but the maxims of Socrates help us to virtue, and Mr. Banting's advice prevents and even cures obesity, as the philosophers will help out tradition and correct convention.

In the compass of this chapter there is no space for laying down even the mere lines of a complete curriculum, but I may be permitted to sketch faintly what seems to me the most trustworthy hierarchy of studies. We shall be proceeding in strict accordance with our views as to the importance to be assigned to tradition, if we at once recognise the help to be got from a knowledge of the successive steps by which the human race in general has mastered the various fields of knowledge. An individual may be expected to follow something like the same order. But we need scientific, *i.e.* psychological guidance to determine for us what stage in the growth of the individual intelligence is likely to correspond with the evolution of the general mind.

To quicken the senses and deepen the intellectual effects, the hands and eyes of infants and very young children must be employed constantly by means of kindergarten, sloyd, and object lessons; amongst older children these must be put aside for work in the experimental or applied sciences, with direct conscious and iterated reference to the larger general laws of mathematics, physics, and logic. If kindergarten and sloyd and object lessons are carried on beyond the years of early childhood, if we do not at a later stage prescribe continuous work, growing in complexity and generality, and, finally, deliberately related to the wide laws governing the pursuit of all knowledge, we are doing little beyond the cultivation of automatism.

I suggest that the main matter of later secular education must for two reasons be literary. First, literary matter covers most ground, carries larger stores of information; and, secondly, it

provides immediate access to ideas of the highest general import and elevation, and therefore most profoundly influential on character and action. By literature of course is meant *belles-lettres*, philosophy, and history.

With these and in all practicable relation to them should be grouped the earth-studies, reasoned observations of the processes of outer nature, 'physiography,' and all associated studies.

So we see that there are two sorts of criteria used for the purpose of determining curricula. Acquiescence in time-honoured practice, the inclination to do as has been done before, together with the desire to gain some quickly accruing and definite profit, these do actually determine the courses of study most familiar to us, supply the criteria that are best understood by the public opinion to which dealers in education must needs defer. But if we are to understand by 'criterion' the one standard that should be the final test of the propriety and adequacy of a scheme of education in its relation to the growth of human intelligence, it must be supplied by mental science.

Different times and different persons have applied criteria of their own, according to their diverse views as to their personal needs or the profit of the State. Mehemet Aly of Egypt founded no schools or colleges and established no institutions the value of which could not be measured in terms of military art; some people in our own day have been moved by the progress of applied science alone; statesmen and thinkers of larger views have included other and more human activities in their provision. So long as there are inequalities in human society, we cannot lay down any complete scheme which shall satisfy every condition of human life. We shall probably do best by taking what we have and making the best of it in the light of our desire to give every one the best chance we can secure for him.

P. A. BARNETT.

ORGANISATION AND CURRICULA

THE questions of organisation and of curriculum are closely interwoven, and it will not be possible to keep them altogether apart.

Introductory

The history of the organisation of schools is not a subject on which it is necessary to dwell at length here; it will be enough to state that, when the curriculum of a school was one and the same for all boys, the organisation of the school was similarly on the simplest plan. There was a succession of classes through which a boy might proceed, passing from the lowest to the highest; if he did not wish to proceed beyond a given point, he left at that point, his individual needs never being considered. The first advance was to add extra classes, out of school hours, for which an extra fee was charged. At Eton, for instance, as I have been told by an old Etonian, an extra fee was paid for instruction in arithmetic in the earlier half of this century. The first step taken in school hours was to establish one class which was not in the regular sequence, into which boys were put who were not to proceed to the highest classical or mathematical studies. At my own old school in 1866, this class was called the Civil and Military Department; at the school with which I am now connected, it existed recently as 'the Modern Class.' While the plan of schools was thus simple, the rest of the organisation was in harmony with it; a form master taught most subjects, including arithmetic and mathematics, to his form; at times a foreign language master entered the form room to upset the discipline, and the form master had a free hour; or a science master took the form, and the form master had more free hours. These were happy days for a headmaster, when there was little or no organisation, when he could devote himself mainly to teaching his sixth form, and the only points concerning which a parent could interrupt him were questions of the progress or non-progress of a boy, his promotion or non-promotion, his leaving or continuance at school. This simple organisation disappeared in most large schools some time ago; and

there is now generally a good deal of skill and dovetailing required in drawing up a time-table. This side of the question of organisation may be passed over. The art of making up time-tables in a large school is something like the knack of putting a puzzle together: some men do it with ease; others with difficulty, and their colleagues suffer—*quidquid delirant reges, plectuntur Achivi.* It is difficult, indeed, to write about organisation except in general terms, because organisation implies details, and unless the details are set before the reader—which cannot be done fully in a short chapter—it is impossible to show how to deal with them.

Organisation of first grade schools

The plan prevailing nowadays in schools which can afford the cost is that of either two separate sides or a bifurcation into sides. It is generally thought desirable that there should be a common portion of the school through which all boys entering in the lower forms should pass, but this may with reason be omitted at times. It often happens in the case of the large boarding schools that boys do not enter till after a preliminary period at a preparatory boarding school, which prepares them till the age of thirteen or fourteen; and in the case of certain suburban day schools a preparatory day school exists, separate from the main school but in more or less close contact with it. In such schools, with the development of the preparatory school, the common part might become very small, and a division into sides might take place from the first. Some day schools, like the Merchant Taylors' School and the City of London School, which draw their boys from all suburbs and hardly ever from the immediate locality, prefer to give preparatory education themselves to the boys who have journeyed into London from the suburbs, without the intervention of any separate preparatory school, and in both these schools there is a large common portion before the bifurcation begins. At the Manchester Grammar School, a similar school in certain respects, there are separate sides from the first. My own preference would be for a common portion in every school; we always find a fair proportion of boys who wish to enter a school young and would pass pretty evenly on to the different sides, and these boys constitute a bond between the two sides of a school. There is a further plan for promoting the unity of a school which is occasionally used. Though boys are taught the subjects specially belonging to their respective sides in their classical or modern forms, the boys on the two sides, taken together, are redistributed for mathematics or natural science, or German, so that there is an intermingling of both sides for one or more subjects of study.

It will be well to take representatives of the boarding Public Schools and the day Public Schools, and to deal with them in some detail. It may be noted, however, that Eton, Winchester, and Charterhouse have no regular modern side; Harrow, Rugby, Clifton, Haileybury, and Marlborough have modern sides, as is the case also in the larger first grade day schools, Bedford Grammar School, Bradford Grammar School, the City of London School, Dulwich College, King Edward's School Birmingham, Manchester Grammar School, and Merchant Taylors' School. At St. Paul's School there is a large science side,[1] but no modern side. I propose to take Clifton College as a representative of the boarding Public Schools. The school, apart from the preparatory school of forty-five boys, consists of two parts:

Type of first grade boarding school

(1) The Upper School, for boys between thirteen and nineteen, which is divided into three departments—the classical side, the modern side, and the military side.

(2) The Junior School, for boys between ten and fourteen, which prepares for the three departments of the Upper School.

The numbers of each part of the school are limited—the upper school to 460, the junior school to 140.

The *Junior School* consists of seven forms: the subjects of study for all boys are Scripture, English subjects, French, Latin, and mathematics, but boys preparing for the classical side begin Greek at a certain stage, while boys preparing for the modern side learn extra French and mathematics.

The *Upper School* consists of a sixth form, with nine forms below it on the classical side and nine on the modern. On the classical side the form work comprises Scripture, Latin, Greek, history, geography, and English literature, and occupies about twenty hours in school each week, besides preparation. On the modern side the form work comprises the same subjects, with the exception of Greek, and occupies about ten hours in school. The rest of the work on both sides alike is done in 'sets,' *i.e.* groups of boys chosen from different 'forms,' according to their capacity in each special subject; the mathematical sets throughout the school and the German and science sets in the upper half are common to the two sides of the school.

Classical side.—In the third and fourth forms all boys learn French and science in sets. In the fifth forms French is a voluntary subject, and each boy has to choose between German and

[1] See London County Council Report, 1892.

science. The form work becomes somewhat elastic, so that boys are able to cultivate special tastes, especially a taste for history.

Modern side.—In the third forms all boys learn French, drawing, and natural science in sets. In the fourth forms drawing ceases to be compulsory, and German is begun, while French and science are carried further. Boys who are not intended for the Army pass up into the modern upper fourth and fifth forms, where considerable facilities are given for special work. In these forms boys do English, Scripture, history, and French, and they may choose any two of the three subjects, Latin, science, and German. Those who are strong in mathematics, science, or modern languages are able to devote a large amount of time to any one of the three. Special arrangements are made for boys who are intended for the engineering profession.

The military side (four forms) is open only to boys who are able to reach the upper fourth form before they are sixteen, and have attained a certain standard in mathematics. The work of this side is carefully regulated to enable boys to pass direct from the school into Woolwich, Sandhurst, or Cooper's Hill (Indian Woods and Forests).

Sixth form.—Boys are promoted from both classical and modern upper fifths into the sixth form. The whole form attend the headmaster's lessons in Scripture and English; but for other subjects they are separately classified. Boys on the military side who reach sixth-form rank share the Scripture lessons with the sixth, but in other subjects work with the military sets.

I am assured that this scheme by no means exhausts the complexities of the organisation, but it furnishes a splendid example of the questions which a headmaster nowadays has to face, and also of the efforts amid variety of organisation to bring all parallel sections of the school together, and thus to secure the unity of the school. It may be roughly asserted that most of the boarding schools follow this plan in the main; but it is very doubtful whether many introduce all the complexities incidental to grouping the boys of different sides in joint 'blocks' for the purpose of redistribution into 'sets' or classes for different subjects of study. It is, however, practically universal now for schools to have a mathematical staff, and to redistribute the boys belonging, say, to the junior school, or the middle school, or the senior school for mathematical purposes, but probably in most cases without the fusion of the sides of the middle or senior school. Whether this redistribution is a desirable plan in the case of the junior boys, I

take leave to doubt, if it is possible to get teachers who can include a capacity to teach elementary mathematics among their other qualifications.

Type of first grade day school

As a representative of a day Public School, I naturally take the City of London School, because it is a school which I have had the opportunity of completely reorganising since 1889. All the large first grade London schools are very much alike; they differ mainly in the number of boys who get scholarships at Oxford and Cambridge; some have large endowments, which are employed on the classical side, and these therefore win more scholarships with the boys of ability whom they attract; others have smaller endowments, and their university output is in proportion.

It should be noted, first, that German has been a vexed question among headmasters: it is not taught in school hours at St. Paul's School;[1] it is taught in school hours at Westminster, Dulwich College, Merchant Taylors' School, King's College School, University College School, and Highgate School. Except for a few sixth-form boys, it was not introduced into the course of the City of London School till 1890. At Eton it was introduced in certain forms as an alternative to Greek in 1886.

The City of London School is a school of 700 boys, and consists (1) of an Upper School, which is divided into Classical and Modern Sides, with a Science Side parallel to the four highest forms of the other two sides; (2) of a Junior School, which prepares for the two departments of the Upper School which are immediately above it, and from which boys are drafted off at a later period to the science side, if their parents so desire.

The Junior School.—The subjects of study are Scripture, English subjects, French, Latin, and arithmetic; but provision is made that, if a boy desires exemption from Latin, he may be taught alternative subjects during the time that his class fellows are learning Latin. This arrangement meets the case of a boy who enters in the highest form of the Junior School, and does not intend to take Latin on the modern side. It is not necessary in our school, but I hold strong views on the necessity of a reform in curriculum, and my governing body—a committee of the Corporation of the City of London—were good enough to allow me to have my way; they were themselves in favour of compulsory Latin. The times for teaching arithmetic and French are synchronised, so that

[1] See London County Council Report.

a boy may be in a higher form for most of his subjects, and in a lower form for French or arithmetic. In 99 cases out of 100, however, a boy is placed in the same class for every subject; if his knowledge is not on a uniform level in various subjects, it is desirable that it should become so, but the arrangement for re-classification exists to meet special cases. A little elementary geology or botany is also taught in this part of the school to stimulate observation.

Classical side.—The form work comprises Scripture, Latin, Greek, French, history, geography, English, writing, gymnastics, and in the higher forms, except the sixth, a weekly lesson in chemistry. German is not taught in school hours on this side, but classical boys can learn it in extra classes out of school hours. Boys are reclassified for mathematics when possible, the principle being that the lower forms on the side constitute one 'block' for the purposes of such redistribution, and the upper forms constitute another 'block.'

Modern side.—The form work comprises the same subjects with the exception of Latin and Greek, which are replaced by more French and by German. Latin is taught as an alternative to natural science, which is studied in every form on this side. I ought to say here that I borrowed this idea of making Latin and natural science alternative from Dulwich College. It is a convenient plan, because, while a portion of the form is with a science master in the lecture theatre or laboratories, the form room is left at liberty for the teaching of Latin to the rest of the form.

In the higher forms of the modern side great freedom in studies is possible, and the times at which different subjects are studied can be synchronised, so that boys may be in one class for one subject and another for another. For the last few years, through private benefaction, we have been able to provide a scholarship to enable a boy to go abroad to some foreign country for six months to supplement his school attainments and get a good command of the language of that country for speaking purposes.

One plan which we use in the school is the method of teaching English subjects in the middle parts of the school in 'cycles.' It often happens that a boy is not apt at languages, either classical or modern, and does not rapidly get promoted; the same ground has necessarily to be gone over again each term in foreign languages, but in English subjects, by grouping a number of forms together in one 'block' which takes the same portions of history or geography each term, boys weak in languages are enabled to cover

the whole cycle of English subjects, even though they are not promoted. It also becomes possible to examine both sides of the school together in these subjects.

Science side.—Boys are not admitted to this side till they have attained a certain literary and mathematical standard. It is too common to let boys specialise in natural science early; but why first grade schools should allow it, I fail to see. One thing is quite certain, that the minute a boy enters a science side nothing will persuade him to pay attention to literary subjects. The principle of sound organisation is to provide a measure of science on the modern side, and to delay a boy's transfer as long as possible; the education in first grade schools, boarding and day alike, should primarily be an education in languages (classical or modern) and mathematics. The object of our science side is (1) to prepare boys for science scholarships at Oxford and Cambridge; (2) for the preliminary scientific and intermediate science examination of the University of London; (3) for the engineering profession. In these days, when certain professors of engineering consider that it is better to proceed to engineering works first before proceeding to an engineering college, the training given on a school science side is a very valuable antidote against a boy's falling hopelessly into rule-of-thumb methods while gaining his practical training.

Most large day schools are organised on the above plan. Some schools supplement their modern side by an army class or classes.

Special details of organisation

I have mentioned that at Dulwich College,[1] on the modern side, Latin and natural science are alternative subjects; I may add that at that school there is not only a science side, but an engineering side. At Merchant Taylors' School,[1] Latin is alternative on the modern side with drawing at one stage, with German at another stage, and with French at the next stage. At the Manchester Grammar School no opportunity of learning Latin is afforded on the modern side. Two plans have been tried there of dealing with the literary subjects of boys on the science side: (1) that of so arranging the non-scientific work of the school that science-side boys may be distributed for it among the forms on the classical and modern sides, according as they wish to combine classics or modern languages with natural science; (2) that of holding parallel classes at the same time for classics or modern languages for science-side boys only, and thus divorcing the science

[1] See *Public Schools' Year Book.*

side from the other two sides. This latter method is obviously not so hampering in drawing up the time-table of the school.

There is one peculiarity about our plan at the City of London School—namely, that a boy has the opportunity of learning in extra classes out of school hours the subjects which are not taught on a particular side. This has advantages in itself, I think, and there is this special gain, that when a boy has to be transferred, through change of purpose on his parents' part, from one side to another, he can be prepared for transfer to a fairly corresponding form by means of these extra classes.

Two plans of school organisation

There are two other plans for organising schools which must be mentioned; the first is in use at Uppingham School,[1] where there is one school throughout, but in the higher forms natural science is alternative with Greek and with German—that is to say, the classical, modern, and science sides of other schools are combined for most subjects of study, and boys are differentiated only by their choice of either natural science, Greek, or German. At the King's School, Canterbury, a similar plan is in use. In the 'Public Schools' Year Book,' under the head of that school, it is stated: 'The school is not split into many "sides"—the unity of each form is preserved—but at particular times alternative subjects are studied. German may be substituted for Greek, and history or science for Latin and Greek composition.' I myself saw this system, subject to variation in details, in work at Dulwich College under a master of the art of organisation—Dr. Carver—in 1878, and I have often thought that with a little extension in the way of substitutes for Latin in the Junior and Middle School, and two or three modern classes in the Upper School, it would be an excellent system.

But much has happened since then; the circumstances of the time, and the competition of school with school, have led to extreme specialisation in order to secure those university distinctions which the public often regards as evidence of the quality of the education given in a school.

The second plan is in use at University College School, London. Summarily stated, the principle of the organisation of the school is that boys may be reclassified for every single subject of study, and it is possible for each boy to have a separate time-table, *i.e.* to pursue a combination of studies unlike that of any other boy. The absence of the general control exercised in other schools by a form

[1] See *Public Schools' Year Book.*

master is met by the appointment of consulting masters, a boy being assigned to one consulting master generally for his entire course through the school.

Real difficulties in organisation occur mainly in small schools where means are limited and the wants of parents are varied.

Difficulties in small schools

There is no reason why a boarding school should not be either a first grade modern school or a first grade classical school, pure and simple; but this clearly cut character is not possible in day schools; parents are not compelled to use a particular boarding school, but are compelled to send their sons to a particular day school in their town. Consequently, when the day school is small, the headmaster is put to many shifts to try and accomplish the impossible. In university towns, such as Oxford and Cambridge, the university often affords the best opportunity for a career to able boys, and, as a university course costs but little for residents, a school in such a town inclines naturally to a first grade classical school rather than to a first grade modern school; in other towns the modern character is more suitable. A crying evil in England at present is that the old classical curriculum dominates in the smaller grammar schools, which perhaps send up one boy every alternate year, or less frequently, to the universities, and the mass of boys are sacrificed to a curriculum demanded by an occasional boy. When, however, it is right and proper to have a first grade classical school in a small town, where the school, even with the addition of boarders, is likely to be small, the form of organisation which seems to me to be most suitable is one in which natural science and drawing, say, are alternative with Latin in the junior part of the school, while natural science is alternative with Latin, and German is alternative with Greek, in the higher forms. If a fair allowance of time is given to French throughout the school (classical boys being partly excused in the higher forms), no practical difficulty would arise in providing both for the classical (including the mathematical) and for the modern boys. It fell to my lot in 1881 to start the Oxford High School, the object of its real founder, Professor T. H. Green, being to provide an avenue for Oxford boys to the university. It was impossible to accomplish this object and to give a complete modern education with the funds then available; there was no science laboratory and no science master, but from my experience there of a school of from 100 to 110 boys, I am convinced that the plan here indicated would afford a real solution of the problem of combining modern with classical work in a

school of small size. In some manufacturing towns it would not be possible to make natural science alternative with any other subject; all boys must learn it, up to a certain age, at any rate. In such case, commercial subjects—*i.e.* bookkeeping and shorthand—must be alternative with Latin in the higher forms, and extra writing and English subjects alternative with it in the lower. A school working under these conditions would probably limit its university work to achieving successes in mathematics and natural science. Boys of special literary ability should be drafted off to other schools by the aid of scholarships.

Thus far our subject has been first grade schools and schools which attempt to some extent first grade work. The organisation of second grade schools is a simpler matter; they are not as yet crippled by the 'specialisation' necessitated by scholarship examinations at Oxford and Cambridge, and the system under which they are conducted is one of alternative subjects in the higher forms. The Parmiter's Foundation School makes Latin, German, and shorthand alternative in the three higher forms of a school consisting of eight forms; each boy must take one and one only. Though shorthand is on a quite different level educationally from Latin or German, this arrangement seems to me to be admirable from a practical point of view. A boy is required to learn one of the three subjects thoroughly, and may choose his subject according to the needs of his future career. Schools organised on this plan have, in my opinion, though others may differ from me, a distinct superiority over schools in which Latin is a compulsory subject. It is the plan adopted in the Leeds Modern School. Natural science is made compulsory, the aim being to give boys through science that training in precision which it has been the habit hitherto to give through Latin. In the Central Foundation (Cowper Street) School the plan adopted is that of one school, with a sixth form of four divisions—a London Matriculation VIth, a Modern VIth, a Technical VIth, and a Civil Service VIth. Classics are taught for six hours a week in the matriculation sixth. French is taught throughout the school, and German through all except the very lowest forms. In some schools, as at the Grocers' Company's School at Hackney Downs, Latin is taught throughout the school, and German is alternative with shorthand. There is little, however, to say about the organisation of second grade schools; the usual dovetailing is required to arrange the masters' time-tables, but the particular point of interest in connexion with them is the curriculum.

Second grade schools

I have long looked forward to the time when in first grade schools modern and classical education should be fused, or nearly fused, together. The fusion would be easy if boys proceeded through the study of modern languages to the study of Latin and Greek, and if the scholarships given to boys on leaving school, both by schools and by the colleges at Oxford and Cambridge, were awarded, in the case of classical scholarships, mainly after examinations which recognised the older studies but at the same time included a large modern language element, and if the teaching of Latin and Greek were transferred somewhat (if necessary) from the schools to the universities. The idea of beginning Latin quite late was suggested to me by the late Professor Jowett, Master of Balliol College, Oxford, and the more I have thought over the matter the more am I convinced of the wisdom of the suggestion. The late Sir John Seeley, to quote a Cambridge professor, felt strongly the importance of beginning with modern languages; his words are: 'Shall we ever pluck up courage to invent a scheme of education frankly not classical? I mean a scheme in which literary culture shall be imparted by means of English, French, and German, and in which Latin and Greek shall have their place as advanced subjects, to be approached gradually by way of the modern languages. It seems to me that we must come to this sooner or later.'

The fusion of classical and modern education

Education ought primarily to aim at mental training and not at the acquisition of information, and this is being acknowledged now in quarters where twenty years ago a distinctly wrong view of the meaning of education seemed on the point of prevailing. At one time the ideal of teaching in natural science was to store a boy's mind with facts, and to accompany this process with experiments intended to verify facts. But there is now an outcry among the younger generation of scientific teachers against this ideal. It is contended that past methods of teaching natural science are wrong in principle, and that the aim of teaching should be not to verify facts by practical work but to make each boy experiment and create his facts for himself. It is not quite clear how this method is to be carried out in practice under the conditions of school teaching, and I only draw attention to it as a revolt against what has passed for scientific teaching of late years. The boy trained in science, as trained under present methods, is declared to be a non-progressive creature; he has not, it is said, learnt how to work for himself and to extend the domain of scientific research; he ought to have acquired less complete knowledge of facts and a much greater

power of advancing from the known to the unknown; he is wanting in the true scientific spirit. These arguments and contentions are as a sweet savour to teachers of literary subjects who have always attached importance to training; they are in a measure the justification of classicists of the old school. It being admitted, then, that method and training come first, and that facts come second in education, we must ask ourselves whether that method and training can best be given through the channels by which we at present give it, or through new ones. Surely the right plan is to begin with modern languages. At this point I wish strongly to urge that the clever and the fairly clever boys ought to proceed to the careful study of the classical languages if they stay at school for higher education, and to affirm my desire to put classics on a higher pedestal by withdrawing from the study of the originals those boys who, in the period of school life allotted to them, are unable to make real progress. First among the modern languages would come English. The neglect of the literature of our own country has long been a reproach to us, and it is high time that there should be an awakening, the main ground for which must be the impossibility of a literary training for the ordinary early-leaving boy, except in a language in which the initial difficulties common to the learning of any language are largely surmounted by daily conversation from the nursery onwards. There is surely a consensus of opinion that boys in general, not a few sixth-form boys only, should be familiarised with the best English literature, and should be led, if possible, to get a feeling for it as such. This object could be attained in a large proportion of cases if time could be found to devote to the subject. We must not stop at English, but must include other modern languages. It is possible for a boy to make in a few years a greater advance in French and German than in Latin and Greek; he can arrive at the literary stage in those languages earlier—*i.e.* with less preliminary training than in the case of the classical languages; next, when a boy leaves school he is a thousand times more likely to carry his knowledge of those languages further than he does the knowledge of Latin and Greek, which, as a matter of fact, we know he entirely abandons. There is a last argument, and here I desert the literary ground, in that wide fields of knowledge are easily accessible to him, for which he has now to wait till the translator appears on the scene. As I have said, I put training first, but if an additional advantage in the shape of practical utility can be gained, it cannot be *ipso facto*

How to accomplish it

fatal, as some would contend, to the consideration of the question. The 'Thank God! it can be of no use to any one' of the mathematician who had discovered an untrodden field of mathematics, is not an argument which should appeal to any one. Education is our object, but we should not refuse to consider a subject merely because it happens accidentally, through no fault of ours, to be useful. The suspicion of utility is a red rag to so many schoolmasters that one is apt to despair of a satisfactory consideration of a new curriculum. Fortunately, we have the parents and the private schoolmaster to help on reform; the private schoolmaster tries the experiments which the public demands, subjects get sorted out in this way, and the public schools at their leisure make modifications in the curriculum.

Modern languages should not be taught in school simply with a view to speaking them; they should be taught by men who have been educated through classics in the higher forms in schools and at the universities and have subsequently lived abroad. This is of the utmost importance, because under these circumstances, and these only, will the true spirit of teaching and the true atmosphere of the teacher prevail.

Passing from incidental questions to the general curriculum as it would become, if modified in accordance with the lines which I am advocating, we should have our boy in the future educated through English and one modern language, preferably French, to begin with, German being added later; after a certain stage, which would be likely to be about two-thirds of the way from the bottom to the top of a school, a bifurcation would take place, and this would be a great improvement on the position existing in many schools when quite early, that is, a few forms from the bottom, a bifurcation takes place, separating schools into two parts, divorcing boys intended for various kinds of life from one another, to the great disadvantage of both sets of boys. After the bifurcation, those boys who have shown a talent for language, and those whose parents would consent to leave them for a reasonable time at school, would proceed to the study of classics, beginning Greek as well as Latin; while those whose school time was shortly to come to an end would pass into a small side which would give higher instruction in modern foreign languages, with some special instruction in subjects suitable to boys' careers; or into another small side, where natural science would take the place of languages as the means of training. Let us examine the advantages of this rearrangement, and consider

Advantages of the arrangement

the possible loss which it might occasion in certain directions. The prime advantage would be that the unity of a school would be assured and boys would be brought up together, and, whatever their subsequent careers, there would be a sort of kinship, bred of common studies during most of their school life, existing between them. There would also be the stimulus exerted by the classical boys on the modern boys, which would be greatly to the advantage of the modern boys; at present, in nearly all great schools in England, there are two sides; the boys on the classical side have an intellectual (and often a pecuniary) object before them, which gives definiteness to their work and consolidates their interests; the atmosphere of a modern side, from which boys are going into mercantile life, is, after a certain age, such as is to be expected from boys who are waiting to be placed out in some business to make a start in learning business habits. If these boys are, however, working in the same classes with boys who have an end in view—an end which has an intellectual side—many of them will forget in rivalry and emulation their eagerness to have done with study. There is another advantage in the system which has been indicated of an organised sequence of studies; it amounts to more than a release of the boy who has no capacity for learning languages from the pursuit of those languages which present the greatest difficulties to him. It partakes of a national character, and it specially merits consideration at a time when both political parties in the State are anxious to deal with the organisation and correlation of secondary schools, by which are meant curiously enough all schools between the public elementary schools and the universities. It is certainly a matter of national interest to secure for the service of the country the talents of all its sons, and the State is forced to consider how boys of talent may pass from the public elementary school to the secondary school, whether first grade or second grade. Whenever this question comes up, the great difficulty that is discussed is the dovetailing of the studies of the three sets of schools. The dovetailing can never be perfect, and if only selected boys pass from one sort of school to a higher, the fact that they are obviously above the average in intelligence will soon set right any slight want of completeness in the organisation of studies; but if there is a *sequence* of school subjects applied to first grade, second grade, and public elementary schools alike, the transfer of boys from school to school would be very easy.

It will be said, on the other hand, that there is a loss—that boys will not reach the same standard in classics as at present by the

time when they proceed to the universities, but for my part I am not sure of this. I think that they will find the training in language gained by learning modern languages a very valuable basis for beginning the classical languages, and that they will progress rapidly, as in the higher classes of the school they will not be hampered by the clogging influence of numbers of boys in those classes who are now learning Latin because it is a fashionable thing to do. A clever boy would reach at the age of eleven, twelve, or thirteen the point at which he would begin classics.

Natural science and drawing have established their claim to be taught in the junior forms, and on the modern sides of first grade schools and throughout second grade schools; but it seems desirable that the natural science taught in the lowest forms of first grade schools which do their own preparatory work, and of second grade, schools should take the form of explanations of simple natural phenomena, atmospheric, geological, or botanical. As the object of this chapter is chiefly expository, and as particular subjects will be considered by other writers, I shall proceed to the last portion of the province assigned me, and give specimens of the curricula of schools, with the hours per week allotted to each subject.

Time-table at Eton College

An analysis[1] of the time-table for the classical forms at Eton gives the following results. It should be noted that each block consists of several forms.

Block	Hours in school per week	Classics	Mathematics	French	German	Science	Extra
A . .	21	15	3	—	—	—	6
B . .	24	15	4	3	(6)	2	—
C, D . .	24	15	4	5	(5)	2	—
E . .	25	15	5	3	—	2	—
F . .	26	17	4	5	—	—	—

For mathematics, French, and science the blocks A, B, &c., are subdivided, and the boys in the block reclassified. In block A the six hours devoted to extra studies may be given to classics, mathematics, modern languages, or science. In B, C, D, boys may learn either Greek or German, the hours devoted to German being deducted from classics. Boys in B who wish to learn German as well as Greek may do so by substituting German for French.

[1] See *Public Schools' Year Book.*

Time-table at Harrow School

At Harrow[1] we find on the classical side, omitting sixth-form work, which hardly admits of classification :

—	Hours in school per week	Classics and Divinity	Mathematics	Science	French
Fifth Form	21½	17½	3½	2	1¾
Remove and Shell	21¼	14½	3½	1½ *	2½
Fourth Form	21¾	14½	3½	1½ †	2½

* In the Second and Third Shells these hours are given to gymnastics.
† Drawing or singing.

Boys in the fourth form who do not learn Greek have 3½ hours per week to give to mathematics in addition to the number given above.

On the modern side, speaking roughly, and taking the school hours as 24½ a week, they would be divided somewhat as follows: Divinity, English, &c., 3¾ ; Latin, 4½ ; French, 4½ ; German, 3½ ; mathematics, 6¾ ; while 1½ hour would be given to special work or to science (fifth) or gymnasium (shell).

Time-table at Haileybury College

At Haileybury[2] the arrangements are as follows :

—	Scripture	English	History	Geography	Arithmetic	Greek	Latin	French	German	Mathematics	Physical science	Drawing
Classical Side												
Form I.	2¾	—	2	—	—	7¾	7¾	1½ or 0	0 or 1½	4½	—	—
,, II.	2½	2	1½	¾	—	6½	6½	1½	—	5	—	—
,, III.	2½	3	1½	¾	—	5½	6½	1½	—	5	—	—
,, IV.	2½	½	1¾	¾	—	5	7½	1½	—	5½	—	—
,, V.	2½	½	1¾	¾	—	5	8½	1½	—	5½	—	—
,, VI.	2½	1	1¼	1	6	2¾	6½	1	—	—	—	—
Modern Side												
Form I.	2½	—	1½	—	—	—	5 or 0	3¾	4½	9½	0 or 5	3
,, II.	2½	1	2	2	—	—	5½	4½	2	8	—	1½
,, III.	2½	1	1½	3½	3¾	—	6½	5¼	—	5½	—	1

[1] See *Public Schools' Year Book.*
[2] See *Royal Commission Report*, 1895.

Three illustrated lectures on geography are given each term in addition to the class lessons.

The statement below gives a rough idea of the hours in school devoted each week to certain subjects at some boarding schools:

—	Scripture and English subjects	Classics	Modern languages	Drawing and science	Mathematics
Classical Side .	3	13 or 12	2 or 3	2* (in a portion of the school)	5
Modern Side .	5 or 4	4	8 or 7	3 or 4	5 or 6

* This time would be given to classics in the higher forms.

In first grade day schools the usual arrangement on the classical side is: Classics, 14 hours; mathematics, 5; French, 3; English and Divinity, 3. If the hours in school are longer than 25 hours per week, the additional time is generally given to classics. On the modern side there is more variety of plan, owing partly to practical difficulties in dealing with alternative subjects, but the hours may be roughly stated as follows: English and Divinity, 4; French, 5; German or Latin, 4; Latin or science, 4; mathematics, 5; special subjects, viz. writing, drawing, singing, shorthand (occasionally), extra science, or extra modern languages, 3. If there are more than 25 hours per week, the extra time is generally given partly to modern languages and partly to mathematics. Latin is perhaps alternative with either German or science. Some schools, however, make Latin compulsory to the extent of about four hours a week on an average, and the time is taken mainly out of what I have described as special subjects. Sometimes science is allowed only two hours, in which case probably two hours' drawing is compulsory. On science sides three quarters of the time is given to science and mathematics as a rule, and one quarter to literary subjects.

Time-tables of day schools

Instruction in the use of tools, modelling, shorthand, and book-keeping is given, if necessary, out of school hours in most day schools as well as in boarding schools.

Note A.—I am indebted to the Wheelwright Grammar School, Dewsbury, a school of 140 boys, in a town where education is rather second grade than first grade, for the following statement of the hours given to various subjects in this school to meet the wants of both sets of boys.

Form	Approximate age limits	Scripture	English grammar, composition, and literature	English history	Geography	Latin, or shorthand and book-keeping	French	Arithmetic	Algebra	Euclid	Theoretical science	Practical science	Drawing and writing	Singing	Drill	German, out of school	Trigonometry	Mathematical mechanics
I., 2nd Div.	8½-11	1	3	2	2	—	3	6½	—	—	Object lessons 2	—	4	1	½	—	—	—
I., 1st Div.	11-12	1	2	1½	1½	4 Lat. or Eng.	3	6½	—	—	Object lessons 2	—	2	1	½	—	—	—
II.	11-13	1	2	1½	1½	4	4	5½ or 3½	2	—	Chiefly physics 2	—	2	1	½	—	—	—
III.	12-14	1	2	1½	1½	4	4	2½	2	1	Chemistry and physics 2 | 1½		2	1	—	—	—	—
IV.	13-15	1	2	1½	1½	4	4	1½	2	2	Chemistry and physics 2 | 3		2	1	—	2	—	—
V.	14-16	2	and History of language 3	1	1	4	4	Criticism of weekly paper ½	2	1½	Chemistry and physics 3 | 3		—	—	—	2	1½	—
Matriculation	15½-16½	—	3	2	1	6	4	As above ½	2	2	Chemistry 2 | 3		—	—	—	Optional 2	—	2
VI.	16-18	Boys working for scholarships, who specialise in different ways																

Greek is only taken by boys who go to Oxford or Cambridge. These boys give up English and French, substituting Greek and special scholarship subjects.

The word 'Physics' includes elementary *experimental* mechanics and hydrostatics.

'Object Lessons' means something more than this term usually implies, and the lessons are illustrated by simple experiments in the Lecture Theatre. Natural History and Physical Geography are touched upon as well as Physics and Chemistry, and great importance is attached to diagrams and notes.

Separate classifications are adopted for Latin with its alternatives, and for Mathematics and Arithmetic above the first form. This meets the difficulty of placing boys who join the school at various ages and have been trained on different lines before entering.

Boys in the fifth form are working for the Local Examinations; hence the extra hour for Divinity.

The word 'Literature' in form I. means reading, while composition is replaced by repetition in that form.

Mental Arithmetic is taken in all the mathematical forms except the fifth for a few minutes each day.

Of the Practical Science hours, two are out of school hours on Saturday mornings, but are not in any way optional.

Note B.—The report presented by Mr. Llewellyn Smith to the London County Council Technical Education Board enables me to close this chapter with a tabular statement of the curricula in 1892 of three typical second grade schools:

Subjects	Parmiter's Foundation School								Grocers' Company's School, Hackney							
	VI.	V.	IV.	U. III.	M. III.	L. III.	II.	I.	1	2	3	4	5	6	7	8
Scripture	1	1	1	1	1	1	1	1	—	¾	¾	¾	¾	¾	¾	¾
Science:																
Chemistry (practical)	1½	1½	1½	—	—	—	—	—	—	—	—	—	—	—	—	—
Chemistry (theoretical)	2	2	1	—	1	—	—	—	—	—	—	—	—	—	—	—
Physics (practical)	1	1	1	—	—	—	—	—	Only to special boys							
,, (theoretical)	1	1	1	1	1	1	1	1								
Drawing:																
Freehand and model	1	1	1	2	2	2	2	2	1½	1½	1½	1½	1½	1½	1½	1½
Mechanical and geometrical	1	1	1	—	—	—	—	—								
Shorthand	3*	3*	3*	—	—	—	—	—	3*	3*	3*	3*	3*	—	—	—
Bookkeeping	—	—	—	—	—	—	—	—	1½	—	—	—	—	—	—	—
French	3	3	3	3	3	3	2	—	4½	2¼	3	3	2¼	3	3	—
German	3*	3*	3*	—	—	—	—	—	3*	3*	3*	3*	3*	—	—	—
Manual instruction	—	—	—	—	—	—	—	—	Only to special boys							
Aritbmetic and mathematics	6	6	6	6	5	4	5	7	9¾	7½	7½	7½	7½	7½	7½	7½
Classics and ancient history	3*	3*	3*	—	—	—	—	—	—	3	3	3	3¾	3¾	4½	4½
Modern history	2	2	2	2	2	2	2	2	—	1½	1½	1½	1½	2¼	—	—
Geography	2	2	3	2	2	2	2	2	1½	1½	1½	1½	1½	1½	1½	1½
English	2	2	2	5	8	8	8	8	—	1½	—	—	—	¾	3	3
Singing and drill	—	—	—	—	1	3	3	3	About 3 hours throughout							

* Alternative subjects.

Subjects	Cowper St. (Central Foundation) School																	
	VI. Matriculation	VI. Modern	VI. Technical	VI. Civil Service														
Scripture	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Science:																		
Chemistry (practical)	1	1	5	1	2	3	1	1	1	1	1	1	1	1	1	—	—	—
Chemistry (theoretical)	1	3																
Physics (practical)	7	1	3	1	1	1	2	2	2	2	1	1	1	1	1	—	—	—
" (theoretical)																		
Drawing:																		
Freehand and model	--	2	3	2	1	2	2	2	2	2	2	3	2	2	3	2	2	2
Mechanical and geometrical																		
Shorthand	—	1½	1½	2	1½	1½	1½	1½	1½	1	1	1	1	—	—	—	—	—
Bookkeeping	—	3	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—	—
French	4	4	2	1	3	2	3	3	3	3	2	2	2	3	3	2	1	1
German	3	3	—	2	3	1	2	2	2	2	2	2	2	2	1	—	—	—
Manual instruction	Taught to groups of 20 boys at a time																	
Arithmetic and mathematics	2	6	7	9	6	8	7	9	7	7	6	6	7	7	5		5	5
Classics and ancient history	6	—	—	—	—	—	—	—	—	—	—	—	--	--	—	—	—	—
Modern history	2	1	1	—	2	2	1	—	1	1	2	1	1	1	1	2	2	1
Geography	—	2	1	5	1	1	—	1	1	1	2	1	1	1	2	2	2	2
English	3	5	2	3	5	4	5	4	4	6	7	8	8	6	9	10	14	12
Singing and drill	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½

ARTHUR T. POLLARD.

THE KINDERGARTEN

IN forming an estimate of the value of any educational system it is best, at the outset, to define as clearly as possible the position it holds in the general system of the country.

The position of the system in England as regards secondary education

The position of the Kindergarten system as regards primary, commonly called in England elementary, education has of late years been definitely recognised by the Education Department (Circular 374 to her Majesty's Inspectors, on 'suitable occupations'), and the Kindergarten system spoken of as the right system for the education of children in infant departments and in the lower standards.

The Department has indeed recognised the Kindergarten as an integral part of the system of national education by accepting a Kindergarten certificate granted by the National Froebel Union as qualifying for the position of an assistant mistress in a public elementary school for infants (*Art.* 51).

To define the position of the Kindergarten system as regards secondary education is less easy, since we have here no central authority; it is in the hands of private persons in their individual or collective capacity. Some large school societies attach much importance to the subject, and there are few large girls' schools now without a Kindergarten Department.

The Girls' Public Day School Company have Kindergartens attached to twenty-nine out of their thirty-four schools, and the Church Schools Company have Kindergartens attached to seventeen out of their twenty-nine schools.

We may also assume that the system has to a very great extent become a part of the secondary education of this country from the fact that there has been a very large increase in the number of those offering themselves for training as Kindergarten students, which has necessitated the starting in recent years of special training colleges for Kindergarten teachers.[1]

[1] For instance, one over which I preside at Cheltenham (one of the earliest started), one at West Kensington under Madame Michaelis, known as the

These circumstances show that, to a certain extent, the public recognises the value of the Kindergarten system as a true basis for education. Yet we can regard them only as hopeful signs; they indicate but a partial recognition of the value of the system; otherwise it would be difficult to explain why Kindergartens are, as a rule, entirely separate departments in our secondary schools. Only in rare and isolated cases does the Kindergarten class form the first rung in the educational ladder, and only rarely is it deemed incumbent on any teacher above the first form, or often on the first form teacher herself, to study the system in order that she may understand that 'gifts' and occupations, lessons, games, songs and stories are but a first and most rudimentary expression of those principles which ought to and do regulate true methods of teaching in the upper and higher classes of a school.

Reasons why the system is not more generally acknowledged as an integral part of secondary education

That the system has not as yet taken its rightful position in the secondary education of this country is due to the fact that Kindergarten teachers are, as a rule, far too young and of too little general culture to be fully qualified in all respects. It requires a cultivated mind and a somewhat matured one, first to understand and then to make clear to others the correlation between mental development, moral training, and seemingly unimportant games and occupations.

Even a so-called fully trained and certificated Kindergarten teacher, when she leaves the training college, has, as a rule, only mastered the practical side of her work; she can manipulate the gifts and occupations, and she can play the games effectively; she can rouse in her children a general and passing interest in natural objects and common things, and she is too often satisfied that all is well if the children in her Kindergarten are happily and prettily occupied, and are taught, in addition to the games and occupations, the three R's with as little strain and effort as possible.

Work of this kind has its value, as all will allow, but it is only in a very superficial sense educating on the Kindergarten system, and it is therefore hardly surprising that, until thoughtful educators

'Froebel Educational Institute,' and those at Bedford and Manchester. Beside these there have been added special departments for the training of Kindergarten teachers at our large secondary colleges, such as the Kindergarten Training Department attached to the Maria Grey College at Brondesbury under Miss Woods. Then beside this, the Girls' Public Day School Company's schools are in some cases making the training of Kindergarten teachers part of their course for student mistresses.

see more definite and tangible results, they hesitate to accord to the system the position it ought to hold in the secondary education of this country.

To effect this desirable result, those who offer themselves for training should be separated into two distinct classes. The first would consist of those who are anxious to gain such a knowledge of the system as can be obtained from a study of the games and 'gifts' and occupations as means of amusing little children and of imparting in a sensible and rational way the elements of the three R's.

Such teachers do good work as governesses in private families; and when in addition they learn all kinds of needlework and cutting out of children's clothes, and also obtain some elementary knowledge of physiology and hygiene, they are far more efficient teachers than they would be without this knowledge. Girls of eighteen years and upwards who have had a good general education, and are bright and healthy and fond of children, are well suited for this kind of work; but they are in no sense qualified to take the headmistress-ships of Kindergartens attached to our large public schools, or to train students and prepare them for examinations. It is because such young and inexperienced teachers have taken these posts and attempted work quite beyond their capacity that the system has been so much misunderstood.

The second class of which I speak, that is Kindergarten teachers who are to undertake the charge of large infant classes with young teachers under them, and often with students to train, need to be women of general culture, who should undergo at least a two years' training whatever their previous education may have been, in order that they may have quiet and sufficient time, free from responsibility and care, to study little children, their health, moods, and general development; to gain some real insight into the best known educational methods; to study the history and science of education, so that they may know what educators in the past have done and thought; and further to have leisure to see what work is being done in the upper classes of a school, the methods used, the subjects taken in the different classes, and so be in a position to judge fairly the place which the Kindergarten occupations, when intelligently used, hold as regards manual training, and the preparation afforded by the stories and nature teaching for the literature and science teaching of later stages.

Such a preparation as this can scarcely be got at a special Kindergarten Training College but rather in a Kindergarten

Department attached to some large school or college, where the student can study the system in its relation to school work generally.

Our next step will best be to define briefly the main principles on which all true educational methods are based, and next to see wherein the application of these principles differs in the aims set before educators with regard to elementary and secondary education respectively. These principles are as follows:

The principles of the Kindergarten system and its aims are the same as those of all real education

1. Through what we teach we must arouse in each child a desire to *be* something, a desire to *do* something, a desire to *know* something. We accomplish this when we make each child feel that he is possessed of innate power or capacity, the gradual or progressive development of which depends on the individual's own activity, which leads to the use of these powers.

2. These powers are of three kinds, corresponding to the three-fold nature, physical, mental, and moral, of every human being; and while it is the possession of these three-fold powers that marks off the human being from every other class of animal creation, yet these powers are in no two cases identical, but are in every case unique and personal, leading one individual to invention and original research, another to manual skill of marked excellence, and a third to philanthropy and acts of self-sacrifice of no usual or ordinary kind.

3. In the development of these powers we must recognise the influence of heredity, and also of environment.

4. In an activity which is the expression of the individual and which has some good end in view, we find that work, productive work, alone satisfies, and produces a sense of pleasure and contentment apart from which a man or woman cannot be said to live truly, but rather to exist, passing through life aimlessly, merely bound or fettered by the necessities and exactions of material needs instead of using these necessities and exactions to contribute to a fuller and more perfect life.

5. Every human being has a dual life to live; that is a personal individual life, the object of which must be to acquire knowledge, to increase power, and thus to live fully and completely; and also a social life, the object of which must be to lessen as far as possible the sum of human misery and suffering, and to contribute as fully as may be to the happiness and welfare of our fellow men.

All methods of education, when true, are based upon principles

such as these ; yet the application of these principles must vary somewhat according as elementary or secondary education is concerned, since the area that can be covered differs somewhat in the one case from that in the other.

Especially in our elementary school must we remember that the child may have to become self-supporting as soon as is possible, and needs such mechanical and technical skill as will fit the boy or girl for business, trade, or domestic life, at an early period.

The scope of secondary education is somewhat different and looks for larger development. It seeks, through the instruction given, to develop more initiative power, to foster originality and resource with an eye less to the acquisition of dexterities than to habits of self-control and associated helpfulness, and such general cultivation as shall fit the individual for professional life, and shall make 'leaders of men.'

That the practical results of both elementary and secondary education have as yet only partially realised these aims, I am quite willing to allow ; it remains for the educators of the present day to improve existing methods, and bring the work done up to a higher level.

When we consider the principles on which the Kindergarten is based, we shall see how well it is adapted to fulfil either or both of these functions. For the child of the elementary school, the practical side of the system has most importance. The preparatory hand and eye training given in and through a skilful manipulation of gifts and occupations is of special value ; whilst the habits of work, of planning and arranging material, of neat and accurate finish given to each simple form whether modelled, cut, or drawn, are invaluable to workman or designer later.

Then the interest in nature inculcated by those who have Froebel's spirit is very important for the child ; added to which many good habits are acquired in the simple social games. Children find out that harmonious co-operation, kindliness of feeling, and gentleness, are conditions without which there can be no brightness and happiness in their lives.

For the child of the secondary school the other aspect of the system is more important. Here stress should be laid on the more slowly attained psychological and ethical aims, as well as on the physical training given. The exact means used, whether those devised by Froebel or by others, are more or less immaterial ; the important thing is to see that the foundations of the work are true, and then the superstructure will be firmly based.

The special purpose of a true Kindergarten is, during the first years of life to form such habits as will readily help the child during the later years of life.

Educational principles upon which the Kindergarten system is based

a. The study of the individual child and the gentle discipline which contrasts so forcibly with the rigid government, order, and silence which until lately have been the supposed marks of a good infant school, are the means used to secure this result. We seek to train individuals, not to crush out individuality; we use the innate activity of the child to produce work suitable to its tender age and capacity, such work as children spontaneously choose and find pleasure in; not for the value of the work itself, but because of the habits of industry, perseverance, and self-helpfulness thus fostered. Then we arouse an interest in life around, in natural phenomena, in the life and growth of animals and plants, in order that the child's innate curiosity and thirst for knowledge may from the first be healthily directed and stimulated.

The means used by a Kindergarten teacher who really understands her work are not necessarily confined to those invented by Froebel; she adheres to the principle, and applies it freely and originally as adapted to her particular school or class. Children thus trained *are* something; each child displays its own character, and yet order prevails; they *do* something, they *work*, not merely like machines when the steam is turned on, but they work with a will and they thirst for knowledge; eyes, ears, and hands all help and are the channels through which all first knowledge is acquired.

b. A second principle of the system is to plan out the training and teaching in such a way that all three sides of a child's nature are fully developed. The games, marching, and singing, the freedom of movement, secure the healthy *physical* exercise and freedom so necessary to the growing child. The stories and nature teaching, the social life of a Kindergarten and the liberty allowed, balanced as it is by a proper restraint, develop the *moral* nature and form the character. The real teaching which is given, the habits which are formed of attention, of accurate observation and thought, and the power to express thought concretely in form and in language, are most valuable *intellectual* and *mental* training.

c. A third principle is so to adjust the surroundings or environment of the child that it may be let alone, not hemmed in and hampered at every turn by rules, regulations, and commands

which weaken will power, crush the sense of responsibility, and leave the child, when these restraints are removed, purposeless, vacillating, and a prey to every passion or emotion that presents itself. One chief object the true Kindergarten teacher places before herself is to make the atmosphere of her Kindergarten healthy and health-producing, and thus indirectly to counteract any inherited tendencies to wrong, and to stimulate and foster an appreciation of all that is pure and lovely and of good report. To do this the Kindergarten teacher must be a good woman; her personal influence will create a spiritual atmosphere; she must stand herself in the light, and bring her children into the light—physical, intellectual, and moral.

d. A fourth principle is the constant recognition of the higher nature in every child, its longing to work, to originate, to invent, to be in its measure a poet and a maker. This longing no mere word knowledge can satisfy; hence the stress laid upon drawing, on modelling in clay and cardboard, on small dramatic representations in the games, on the variety of the means used to help the young child to form, produce, devise, and thus beget habits of work which will lead later to invention, to works of art, to discoveries in science, and to all higher activities.

e. Lastly, the system recognises the dual life of the child in providing for the individual and social sides of life equally; for the individual side in the care and attention bestowed on each child, and for the social side in making games and life in community, even if only for a few hours each day, part of the earliest education. The importance attached to games in our large public schools, to drill, gymnastics, and class music, all have their counterpart in the Kindergarten, and do for the little child what these continue to do for the older boy or girl. It is a recognised fact that the drama and the dance, or rhythmic movement, may play an important part in the education of a nation. We admit the truth of this, and use the same means, only in a form suited to the tender years of our little children, in our Kindergartens. It is as true of human life as it is of vegetable life that growth is progressive and gradual, and that, as the seed contains all the promise of the full-grown flower or fruit, so too in the infant are latent all the possibilities of the future artist, the man of science, the orator, the physician, the general, or the noble self-sacrificing missionary or philanthropist, man or woman.

A careful study of the two time-tables appended, the one for a Kindergarten class of children up to seven years of age, the other

for Forms I. or II. in a secondary school, will show how close is or rather ought to be the connexion between the two; the real difference being that in the Kindergarten class the teaching is more in a concrete form, the lessons are more varied, the hand occupations and games occupy rather more time than in the lower school forms, and the lessons are of shorter duration, being rarely more than twenty to twenty-five minutes long as compared with the half-hour lessons in the secondary school.

The subjects which form a Kindergarten curriculum are the same as those in the lower forms of a secondary school

Kindergarten class. Age five to seven years.
Morning work, 9.30 *to* 12.30.

1. Prayers and Scripture lesson daily.
2. Arithmetic lesson daily.
3. Reading.
4. Luncheon and recreation.
5. Games, drill, or singing lesson.
6. Writing or drawing lesson.
7. Nature or object lesson, or story or geography lesson.
8. Hand occupation in the form of clay modelling, needlework, paper folding, mat plaiting, &c.
9. Dismissal song.

Forms I. or II. in a Secondary School.
Age seven to nine years. Morning work, 9 *to* 12.45.

1. Prayers and Scripture lesson daily.
2. Arithmetic lesson.
3. Reading, or grammar, or language lesson.
4. History, geography, or recitation.
5. Recreation and luncheon, followed by singing class or gymnastics.
6. Drawing or some form of writing lesson.
7. Object lesson, or elementary science, or geometry.
8. Hand occupation in the form of needlework, basket work, modelling in clay or cardboard.

Home lessons.—One hour daily.

One written lesson; one lesson to be committed to memory.

Let us compare the style of the lessons in the two classes. Suppose that religious teaching is allowed. In the Kindergarten the daily Scripture lesson will be in the form of a Bible story, the

teaching and explanation of some simple hymn or suitable text. It will be oral, and good pictures will be used.

In Forms I. or II. the Scripture lesson will be a consecutive course on Bible history; passages will be read from the Bible, and verses and hymns will be learnt at home and repeated in class; and in the case of Church schools there will be a weekly catechism lesson, or one on the collect, epistle, or gospel for the week.

In the Kindergarten class the daily arithmetic lesson will vary in form, being a purely concrete lesson given with the 'gifts,' stick-laying, or other Kindergarten means on some days; on others the writing of figures connected with the concrete work of the previous day; or the working of little puzzle questions on the numbers taught, to be worked as far as possible mentally; or different counting lessons done individually or by the class collectively. The object of such teaching is to familiarise the child with numbers; to get him to see that figures represent collections of units, and to understand something about such operations as the adding, subtracting, and dividing of numbers.

In Forms I. and II. concrete teaching will be to a great extent discarded, except in the case of fraction lessons, when Froebel's 'gifts' are found very valuable helps to make the subject clear. Paper and mental arithmetic will be the *form* of the teaching; the *aim* being, as before, to show the value or power of numbers, and to apply this knowledge to the working out of problems, and thus to form habits of thought and real concentration of attention.

In the Kindergarten class the reading lesson will be in the form of word-building on the blackboard or with loose letters, reading from a sheet or book, and the transcription of what is read, the words to be built up on slates or in books; the aim being to teach the power or sound of letters, to lead children to observe processes, and give corresponding signs, to perfect the organs of hearing and speech, to make the children familiar with the distinctions and relations of articulate sounds, and thus by phonetics to lay a good foundation for future language studies.

The writing lesson is always closely connected with the reading, and thus the connexion between the sound and the character representing the sound is made clear. Teaching of this kind obviates all learning of columns of spelling, so wearisome to the child and so monotonous a task for the teacher.

In Forms I. and II. the reading is solely from books, although in some cases the transcription from the reading-book is not discarded. The aim of these lessons is to produce fluent readers

and to see that the sense of what is read is fully entered into. Connected with these lessons there will be spelling exercises, dictation, and recitations.

Then the nature teaching and object lessons of the Kindergarten will take the form of conversations between teacher and pupil about some object or picture, the subject being chosen with some reference to the season of the year and the age of the children. Seeds will be sown, plants tended and pet animals kept, the whole object of the teaching being to awaken interest in natural objects and to make the child more conscious of its own life by contrast with other forms of life.

It is not difficult to see the connexion between such teaching and the object lesson of Forms I. and II. or the elementary botany or zoology lessons. In these forms more consecutive courses are given; collections of flowers or leaves are made, pressed and mounted; and the lesson is somewhat more definite in character and is reproduced in writing in some form or other. The object of these natural science lessons is to awaken interest in the outside world, and to form habits of accurate observation and reflection.

The story, fairy tale, or simple biography lesson of the Kindergarten, told as these are with the object of healthily cultivating the imagination, calling forth feelings of right emotion as deeds of heroism and tales of virtue are related—lessons such as these, used to cultivate power in the use of language as the expression of thought, are a fit preparation for the history or literature lesson of Forms I. and II., where the object, if I mistake not, is not so much to give bare historical facts in chronological sequence as to show what has been done in the past to make our native land what it is, and to impress indirectly but none the less effectually such moral lessons as that deeds of virtue and vice bring their own sure reward sooner or later.

The physical geography lesson of the Kindergarten, accompanied as it always is by clay and sand modelling to illustrate the parts of land and water, is the best possible preparation for the geography lesson of Forms I. and II.; then the terms used and the names learnt are more than words, they express facts realised by an appeal to the senses.

The simple hand occupations of the Kindergarten in the form of mat-plaiting, paper-folding, drawing, moulding in clay and cardboard, the pattern laying with coloured slabs of wood of different shapes, or with sticks and rings &c., the sewing of lines to outline objects on drilled cards, the bead-threading and bead-

designing lessons, when colour, form and number teaching are all combined, are the earliest and best forms of hand and eye training possible at this tender age, and it is from and as a direct result of such training that real artistic work grows. The simple checker-drawing of the Kindergarten, if not continued too long, prepares for drawing and brush-designing later; the sewing on cards and mat-plaiting lead on to real needlework, basket-weaving, chair-caning, and rug work, by which most useful and artistic results can be produced; and the child, at the age when it is in Form I. or II., can be taught to produce and invent in a material and manner suitable to its years.

The singing lessons in the form of action songs in the Kindergarten are a natural preparation for the singing class later on.

It is not difficult to see in the simple Kindergarten games, drill, and marching, the starting-point for the social games and gymnastics of the secondary school; in both cases the aim is first to give healthy physical exercise and freedom of movement in the games, which, balanced by regulated movement in the marching and drill, produce a well-developed boy or girl. For social purposes the games in both the Kindergarten and secondary school are the first and best form of training which can be devised to counteract the possibly too great individual training of the class-room, and to prepare the child for the claims of social as well as of individual life later.

As I have attempted to show in this chapter, no part of the child is left uncared for in a good Kindergarten any more than it is in a good ordinary school. In both we seek to form habits of thought by training the child to attend, to observe accurately, and to reproduce the result of its observation in some form or other; at first in a purely concrete form such as drawing or building, the earliest forms of speech for the young, and later in the form of narrative related or written, when language is used to clothe and give form to ideas. We endeavour in both to train the child to take his part in life as an individual and as a member of the community, by a right appeal to the imagination and the emotions, by training him in habits of virtue, and counteracting any wrong inherited tendency through a wise adjustment of environment and a judicious appeal to innate power and tastes; and in both we care for the healthy development of the senses both for their physical and also for their intellectual value.

ELINOR A. WELLDON.

READING AND SPEAKING

I often think how strange it is that amongst all the efforts which are made in these times to teach young people everything that is to be known from the cedar of Lebanon to the hyssop upon the wall, the one thing omitted is teaching them to read. At the present time, to be sure, it is a very rare thing to find any one who can teach it, but it is an art which might be propagated from the few to the many with great rapidity, if a due appreciation of it were to become apparent.—SIR HENRY TAYLOR (quoted in Solly's *Acting*).

The Church Service is performed by us clergy in so slovenly a manner that not only the beauty and the spirit of the service is lost, but the very meaning is obscured, concealed, and perverted. How can this be otherwise when there is no teaching (of reading) in our public schools, no teaching in our universities, no teaching in our training colleges, no competent episcopal test when young men come to be ordained?—CANON FLEMING *on reading*.

Educational establishments in which boys are taught and young men are trained for the Church, for the Bar, for teaching, &c., rarely profess to furnish any instruction in the use of the voice.—*Memorial of British Medical Association*, 1893.

La meilleure manière de comprendre l'ensemble d'un ouvrage c'est de le lire tout haut.—*Legouvé*.

I

The treatment of the subject in these pages

THE few pages allotted to me will not be wasted in rhetorical admiration of good reading or in denunciation of those who read badly. The short list of books on page 55 will supply these *ad libitum*. Nor will more than a line or two be spent in trying to prove the importance of the subject. It is enough that the Editor thinks it important. The various sections will be filled with suggestions. Each will be followed by a summary, and a general list of suggestions will be added at the close

II

Instruction in reading has given rise to the following widely spread notions :

Some notions on the subject

1. *Many people assert that anyone can teach it.*—The answer to this is that if anyone can teach it, it is a wonder that only so few do ; for it is a common and well-merited reproach that Englishmen cannot read well. But the outcome of this belief is that 'anyone' is often set to teach it—with the usual result.

2. *Many people assert that no one can teach it.*—For this there is something to be said. The very best reading, like the very best acting, cannot be taught. It presupposes a love of the subject, a taste and a gift for it, a nice discrimination of tones and shades in the human voice, an appreciation of the fine in literature, and a certain amount of general knowledge. This truth, however, should no more deter people from studying and teaching reading than the fact that we cannot all be consummate performers should deter us from practising cricket.

3. *Many people assert that no one requires to learn it.*—To this there is no answer.

4. And lastly, great numbers of people, including some clergymen, some schoolmasters, some managing committees, and many individual students, think, if they do not assert, that it can be learnt in six or twelve lessons. To this it may be replied that good reading and elocution are no more easy of attainment than good boxing or good piano playing, and that, though twelve lessons may be valuable to those whose home training or cultivated surroundings have laid the sure foundation, constant practice is required to make the excellent reader.

It is assumed, then, that, as any other science or art may in rare cases be studied, and studied with success, by exceptional students without outside aid, so a man with a natural gift for reading and with a keen observation may make himself into a good reader ; but that for the average pupil and the average adult, reading is only to be learnt from (not imitated from) a good reader and a good teacher of reading, just as good swimming and good Latin prose can only be learnt from a good swimmer and a good Latinist, and then only when swimmer and Latinist can teach.

III

All that is said, applies, *mutatis mutandis*, to recitation, to lecturing, and to speaking wherever distinctness is necessary. What is required is :

Division of the subject into four parts

(*a*) That the speaker's every word shall be heard without effort on the part of the hearer.

(*b*) That the speaker's pronunciation shall be good and that of an educated man.

(*c*) That the speaker's interpretation of what he is saying shall be thoroughly felt by the audience.

The heads under which the subject will be considered are the following :

1. Articulation and distinct enunciation.
2. Clear reading.
3. Pronunciation.
4. The essentials of good reading.

IV

Articulation and distinct enunciation

People will not believe that they do not speak their words distinctly ; and it is only by keeping a most careful watch upon ourselves and others that we can hope to prove how much effort is required to make lips, teeth, and tongue do their proper work. The opening of the mouth wide, the screwing of the mouth to one side, the showing and the covering of the teeth, the protrusion of the tongue and the withdrawal of the tongue as far back as possible, the raising of the upper lip high above the teeth, the lowering of the lower lip below the teeth—these are only a few of what may be called 'dumb-bell exercises for the mouth.'

These exercises are not uninteresting ; they do not permanently distort the face, and they aid materially in giving flexibility to the muscles round the mouth.

Exercises in difficult words follow ; and of them anyone can write lists. *Strength*, *fifth*, *lists*, *asked*, *masks*, *rural*, are simple specimens. Pupils who find difficulty in producing certain sounds should be taken privately ; with them we are not here concerned.

Summary.—Articulation of words is to be insisted on—

(*a*) By means of mouth exercises ;

(*b*) By constant repetition of difficult words ;

(*c*) By continually beginning the reading lesson with exercises and by never neglecting indistinct articulation, either in conversation with pupils or in the reading lesson.

V

Clear reading is nothing but good articulation of the words in sentences, such words being kept separate from one another. 'Errdanstrayed,' 'chart in heaven,' 'gmornin,' 'nothing that Thoustmade,' are poor substitutes for 'erred and strayed,' 'which art in heaven,' 'good morning,' 'nothing that Thou hast made,' but they are the ordinary substitutes.

Clear reading

Nothing but care is required to produce clear reading. Every instance of indistinct reading must be checked : the reader must go warily to work : his co-readers must for some part of the lesson have the books closed, *and must hold up their hands whenever they miss a word or find difficulty in catching one.*

The most hardened offender may be made to read a passage clearly by these means ; and if he can read one passage clearly he can read a thousand. Clear reading is only preparatory to good reading ; but it is the one thing that educated readers require. There is hardly any more effective method of curing careless reading in oneself than by placing a friend at the end of a room or corridor, and asking him to stop you by clapping the hands or waving a handkerchief whenever he misses a single word. This method of cure is specially to be recommended to clergymen, who can always get a friend to help them and an empty church.

Exercises will be necessary, but such exercises as 'Mrs. Fisk's fried fish sauce shop' are difficult even for the trained reader. For the ordinary pupil the reading lesson should be enough. Our elementary schools produce year by year thousands of *clear* readers (not *good* readers), but can we say the same for secondary schools ?

A good reading lesson then should be divided into five parts :

(*a*) Articulation exercises, apart from book.

(*b*) Mouth exercises.

(*c*) More articulation exercises.

(*d*) Reading by one person, the others to keep their books shut and constantly to delay the reader.

In junior classes and with all students in their earlier lessons, these four divisions may well take up half the lesson.

(*e*) Reading and the criticism of the reading.

It is quite unnecessary to get in more than half a page into the lesson, especially when younger children are reading. A class may be allowed to use the last five minutes for private reading.

VI

Important as are articulation and clear reading, to the would-be cultivated reader they are almost valueless unless accompanied by accurate pronunciation. Rightly or wrongly this is the hall-mark of the speaker and reader; and the self questions of every speaker and reader must be these:—

Pronunciation

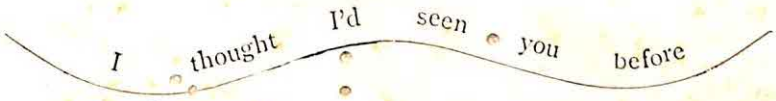
Do I speak in such a way that nobody can tell what part of England I come from?

Have I any peculiarities in vowels, in syntax, in phrase, in intonation?

Have I, for instance, the accent of Devon, of Cheshire, of Yorkshire, of Somerset, of Dublin, of Scotland, of Oxford, of London?

Do I speak of the mŏon (mōōn), of grăss (grāss), of 'wanting my coat mending' (mended), or of having herrings to (for) my breakfast?

Is a boy in my mouth a by, or a child a chaild? Do I say tellum (tell him) and confuse my shalls and wills? Do I aristocratically drop my g's or democratically drop or insist loudly on my h's? Do I roll a sentence along as on a switch-back railway?



Do I *affect the pulpit* and speak mincingly of knōwledge and of meeting togethah? Do I remember the stage and become falsely tragic or sepulchral? Am I forensic or collegiate, and if collegiate, am I don-like or freshman-like? In short, into which of the thousand pits open to me do I fall?

To anyone who objects that there is no standard of pronunciation and intonation, it may be said that refined speech is that which passes current without notice wherever cultivated women and men *from different centres* assemble and converse.

Now for all the possible faults of pronunciation, grammar, and the like, there is only one remedy—*the imitation of a good speaker.*

Until good readers who have no mannerisms, no dialect, no affectations, teach in our schools, good teaching of reading will be impossible.

Summary.—The imitation of a good speaker is the only thing that can ensure refinement in speech for those who have it not.

VII

We come now to good reading and speaking as something distinct from articulation, clear reading, and refined speech, all of which are subsidiary to it. It seems best to tabulate the suggestions which student and teacher alike must consider. They apply to reading and speaking either in a small or in a large room.

The essentials of good reading

1. Know what you are reading. Even in class practice, students should read the passage over silently at first; but if you are to read before many people, for their entertainment and your own, it is well to know your book thoroughly, having studied beforehand every line and every thought. If you have not made it clear to yourself, how shall you make it clear to other men?

2. Feel what you are reading. Enter wholly into the spirit of the speaker whose words you are interpreting. It is useless to give rules for the correct representation of pathos, anger, and the like. Every man and woman, and certainly every child, can be pathetic or angry enough in tone when it is necessary. Therefore if you require any master but yourself, study children at play.

3. Let your studies be varied: no good reader can know too much.

4. The golden rule of all good reading is *Stop at every picture.* Commas, semicolons, and full stops, have little to do with the teaching of the pause: pictures have everything to do with it.

Observe the following paragraph from the Parable of the Tares.

The field (picture) is the world (picture), the good seed (picture) are the children of the kingdom (picture), but the tares (picture) are the children of the wicked one (picture); the enemy that sowed them (picture) is the devil (picture), the harvest (picture) is the end of the world (picture), and the reapers (picture) are the angels (picture).

Apply this golden rule always: it will save the reader's breath, and listeners will not complain of his going too fast; they will not wrinkle brows, nor put hands behind their ears; and they will not give up listening as a bad job. The greatest compliment the

present writer ever heard paid to a reader was paid by an old woman, 'He's so easy to listen to.'

5. In all verse and solemn prose prolong the vowels. The poet who wrote the 'Death of Arthur' gives in a line and a half an excellent direction for the good reading of stately verse:

> Rolling out his hollow o-es and a-es,
> Deep-chested music.

6. Never strain the natural voice. However large the room, if it be still, a whisper may be heard all over it. Practise with a friend when the room is empty. If you can be heard in an empty room you will be heard with greater ease in a full room.

7. Never let your hearers lose a sentence or a word because of interruption. Invariably repeat your word or sentence: twice if necessary. And never begin till your hearers are quiet.

8. Aim your voice at the mouth of the person farthest from you, if you wish to be heard everywhere.

9. Unless your room be small, do not be tied to your book or manuscript. (This, of course, does not apply to simple reading; but rather to lecturing and reciting.)

10. If your reading, lecture, or speech be particularly pleasing to any one part of the room, speak to that part: avoid looking at enemies. This does not contradict 8.

11. Use gesture and tremor of voice, for passion or tears, slightly, hinting at what you have in reserve.

It will be found that all the suggestions made above are workable in a class, especially in an advanced class; but a short specimen lesson is added, exemplifying something of the rules.

VIII

A short specimen lesson

1. I saw a smith stand with his hammer, thus—
2. The whilst his iron did on the anvil cool—
3. With open mouth swallowing a tailor's news,
4. Who, with his shears and measure in his hand,
5. Standing on slippers which his nimble haste
6. Had falsely thrust upon contrary feet,
7. Told of a many thousand warlike French
8. That were embattled and ranked in Kent.
9. Another lean unwashed artificer
10. Cuts off his tale and talks of Arthur's death.

We will suppose the class is a fairly advanced class: it can

read clearly and can pronounce English well. The first thing to do is—no—not to read the passage yourself, but to make one of the class read it. Then ask for explanations. The passage tells its own story ; if it does not, explain the circumstances that gave rise to the speech. We are now ready to begin. The numbers refer to the lines.

1. How many pictures are there? Two. Then where is the first pause? At 'hammer' (some may stop at 'smith.') When does the gesture come in? Before 'thus:' *Not at or after 'thus.' Gesture always comes before the word* (see Hamlet's advice to the players—which, by the way, every reader should know by heart).

What is the gesture? Your class will try it. Some one will tell you it amounts to this—left hand on hip, right hand holding handle of hammer. But the gesture must be *slight.*

2. Be careful of 'whilst.' It is a difficult word. The line contains one picture and there is no pause in it. If you are to stop at 'iron' and 'anvil' let the stop be very short indeed.

3. Be careful of 'open:' How is 'open' represented? By lengthening the 'o' and by very slightly rounding the mouth and opening the eyes. Your class will tell you this.

There is a picture at 'mouth.'

Practise the word 'swallowing' till the sound of the word represents the idea. The word may have to be tried fifty times before you get what you want.

4. 'Who' is a picture by itself.

No gesture and no pause is necessary. The next pause is at 'hand.'

5. The pause is at 'slippers.'

The next pause is at 'feet.'

You have not stopped at the end of the line. That matters not: you are reading sense, not lines. Besides, how are you to represent the nimble haste except by some nimble haste in your reading? But beware of the articulation.

6. Note the 'contrary.' Every hearer must feel (1) that it is wrong, (2) that Shakespeare meant the word to be so pronounced, and that therefore (3) contrary is right.

7. The pause is at 'told.' 'Told' is the picture. The very faintest tremor of fear in the tailor's voice may be represented. The tale goes on to 'Kent.'

9. Another (picture), lean (picture), unwashed (picture), artificer (picture).

You can always emphasise a word by pausing *after* it; noise does not necessarily emphasise.

10. Your class will read 'Cuts off his tail' and will laugh; until some one hits on the right way of transforming 'tail' into 'tale,' viz. by reading 'Cuts off *his* tale.'

And talks—a pause: for the story is new—and sad.

'Of Arthur's death.' An excellent chance is here given to the class; and some one will hit on the expedient of expressing the general horror and sympathy of the population by whispering the words. The word 'death' is always pathetic, and, like all pathetic words, has to be practised. The dentals come out strong.

Your class may now learn the piece thoroughly, and at the next lesson they may read it again. But, *until they have taught themselves, under your guidance, how to read it*, you should not read it aloud to them.

IX

Finally, you are to encourage the appreciation of good literature, knowing that good reading will react on this appreciation and make it greater still; and you are ever to impress on your pupils two things:

1. There is no hard and fast way of reading a speech. Never imitate slavishly.

2. Always be yourself; be natural.

In a book which was written by me some years ago I made a suggestion which I take the liberty of repeating here. It amounted to this.

Conclusion

To improve reading throughout England, it would be a good thing to establish Reading Colleges. Six good readers might be chosen who should preside over six colleges, and to each of them should come twenty learners from all parts of England, to undergo three months' hard training in reading and cognate subjects. These 120 learners would hold Reading scholarships to pay for their expenses, and would return, if they obtained the necessary certificate, to hold classes of teachers in the large towns. During the very first year the heads of the colleges would have trained 480 readers, who in their turn would be training thousands more. It is only a suggestion; would that it could fall on the soil which can if it will push it to maturity

I end with the quotation with which I began:

'I often think,' wrote Sir Henry Taylor, 'how strange it is

that amongst all the efforts which are made in these times to teach young people everything that is to be known from the cedar of Lebanon to the hyssop upon the wall, the one thing omitted is teaching them to read. At present, to be sure, it is a very rare thing to find anyone who can teach it, but it is an art which might be propagated from the few to the many with great rapidity if a due appreciation of it were to become apparent.'

Additional Suggestions to Those who have to Speak for Many Hours in the Day[1]

1. The rooms must be ventilated. Sleep with a window open.

2. As far as is possible inhale through the nostrils, and expand the lower, not the upper, part of the trunk. To do this will require months of practice. A reader should accustom himself to it when not reading and speaking.

3. Practise mouth gymnastics and lung gymnastics, such as those mentioned on page 47, to which may be added:

(*a*) Practise the holding of the breath, not longer than twenty seconds.

(*b*) Practise speaking with one breath not longer than ten seconds.

(*c*) Practise intoning on one note, not longer than twenty seconds.

(*d*) Practise speaking with mouth as widely open as possible, the tongue being tucked out of the way.

(*e*) Let all words be clear and sharp, shooting from the lips at the opposite wall.

4. Never keep the voice raised for any length of time.

5. If troubled with sore throat or cold, lower the voice still more. People, even children, always make allowances for anyone in suffering, and assist by being quieter.

6. Do not drink much in the hours of speaking; if necessary, take a sip, a very little sip, of water. Rinse the mouth two or three times in a hard day.

7. Speak well above your book, raising the eyes often from it: do not wear tight collars or waistcoats (ladies will find advice about dress in 'Voice, Song, and Speech,' pp. 89, 188, *seqq.*).

8. Do not drown noise by your voice; but repeat words or even sentences.

9. Accustom your hearers to expect a natural, conversational voice. Voices are lost by being strained.

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[1] Many of these are taken from *Voice, Song, and Speech*, by Dr. Lennox Browne. 5*s*.

10. All easy gymnastics with the dumb-bells and barbells; or well-chosen drill exercises without apparatus, such as are described in Maclaren's 'Physical Exercise,' 7*s.* 6*d.*, or in Alexander's 'Modern Gymnastic Exercises,' Part II. (advanced), 2*s.* 6*d.*, are useful in developing chest, neck, and throat muscles; but the exercises should be done without speaking or singing, and in a well-ventilated room, or out-of-doors.

11. If possible, stand while lecturing.

12. Remember, above everything, that a small expenditure of breath, rightly governed, and so easily exhaled that it will not make a candle flicker if placed before the mouth, is capable of filling any room if *accompanied by distinct articulation.*

Some books suggested.

Plumptre: 'Lectures on Elocution,' 15*s.* (Trübner), with appendices on difficult words. Legouvé: 'L'art de la lecture,' 3*s.* 6*d.* (Hetzel et Cie). Legouvé: 'La lecture en action,' 3*s.* 6*d.* Miles' 'Standard Elocutionist,' 3*s.* 6*d.*, with many unhackneyed passages. Canon Fleming: 'Reading and Speaking,' 3*s.* 6*d.* Garcia: 'Art of Acting,' 10*s.* 6*d.* 'Acting,' J. R. Solly, 2*s.* (E. Stock). A Burrell: 'Recitation; a Handbook for Teachers,' 3*s.* 6*d.* Sweet: 'A Primer of Phonetics.

ARTHUR BURRELL.

WRITING

WRITING has been characterised 'as the greatest and most useful of all human inventions;' and Bacon says, 'The powers of the memory, without the help of writing, can do little towards the advancement of any useful science.' When means of communication were limited, and the knowledge of books was confined to a few, writing was regarded chiefly as an ornamental art, requiring great application combined with infinite care and skill, while the penman was an artist who prided himself upon the beauty of his manuscript. The introduction of printing from type, and the rapid multiplication of copies of books which followed, added largely to the numbers of readers, and there ensued of necessity a greatly increased use of the pen. The intricate forms of the Old English characters, however, still made the art difficult to acquire. Relief came with the adoption of the Italian characters, their simpler forms, consisting of easy curves and straight strokes, being much more easily imitated; and the art of writing now became easy of acquisition. At first the script followed somewhat closely the shapes of the printed characters, and the teachers of caligraphy devoted their attention almost exclusively to perfection of form and the production of ornamental flourishes, often obtaining legible and graceful writing, but at a great sacrifice of time and labour.

Importance of writing

The exigencies of modern times demand another characteristic —viz. *rapidity*, the two most important essentials in good writing being now legibility and rapidity. Under the old system, if we may dignify it by that term, there was no attempt to secure these two necessities; legibility was sacrificed when rapidity was attempted, and *vice versâ*; nor was any attempt made to teach the pupil a good current hand as distinct from the copy-book hand. Bad writers frequently excuse themselves by quoting the oft-repeated statement that 'men of genius always write badly.'

Now, though this may be the case in some instances, it does not by any means follow that those who write badly possess genius. The origin of this statement is not difficult to trace. The mind thinks much more quickly than the hand can record; hence, in the endeavour to note our ideas rapidly, legibility suffers. Another equally important explanation is that in all probability these bad writers never received any proper instruction how to combine legibility in writing with rapidity in execution. This statement furnishes a powerful argument for the necessity of paying more attention in schools to the methods by which this desirable combination may be secured.

The characteristics of good writing are legibility, rapidity, and beauty of form.

Characteristics of good writing, and how to secure them

1. LEGIBILITY.—This is the most important attribute of good writing, and should be the first aim of the teacher. It depends upon several factors, the most important of which are the *form* and the *slope* of the letters.

(*a*) *Form.*—The letters should be formed from simple elements—firm, straight, parallel strokes, rounded turns, and uniform loops, with an absence of all unnecessary strokes, as redundancy of strokes and angularity of turns both tend to illegibility.

(*b*) *Slope.*—The tendency of modern writing is to abandon the old sloping style, in which the letters make an angle of about 60°, and to more nearly approach the vertical. Sloping writing is undoubtedly more difficult to write, less easy to read, much slower of execution, and, above all, has a tendency to cause the pupil to assume unnatural positions, which prevent the proper development of the body, tire the muscles, and are detrimental to the eyesight.

With regard to *vertical writing*, the advantages are: that it is hygienic and ambidextrous, the body being erect and in front of the writing; the shoulders are level, and there is no obliquity of vision; the position and 'movement' are practically the same as those required in drawing; it is easily taught and acquired, easily read, and lends itself to rapidity in execution.

With the exception of ambidexterity, all these advantages may be claimed by *writing* which is *nearly vertical*, sloping at an angle of about 10°. This slight slope prevents the tendency to backhand writing which the vertical style is liable to, gives a firmer and more graceful appearance to the writing, is equally easy, and probably more conducive to rapidity.

In choosing a style of writing for teaching, it should be remembered that the eye finds more variety in, and therefore more easily discriminates, curves than straight lines. This consideration at once condemns those styles which, at any stage of teaching, exaggerate the lines connecting separate letters, and, by destroying the roundness of writing, destroy also the spontaneity of individual development which we call 'character.'

2. RAPIDITY.—This is secured by paying attention to the position of the body, the proper holding of the pen, and, above all, by the adoption of simple, well-formed letters, which, when combined, will admit of the pen being kept continuously on the paper from the beginning to the end of the word. For example, notice that in fig. 1, where the old-fashioned forms are used, the pen is lifted after every letter; while in fig. 2, where the forms and slope of the letters are modified, the word can be written continuously with ease. When the shapes of the letters are well known and the writing is uniform and legible, much more attention should be given to style and pace. When this stage of progress is reached, it is a waste of time to devote the whole of the writing lesson to the copying of engraved head-lines.

FIG. 1.

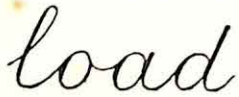
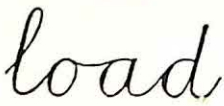


FIG. 2.



3. BEAUTY OF FORM.—This is largely where the pupil's own individuality will be perceptible. Those who have artistic perceptions will gradually reject unsuitable and unpleasing forms. This perception may be greatly cultivated and assisted by the use of the blackboard to suggest suitable and well-formed adaptations, especially in the case of capital letters. The old-fashioned capitals, though often formed of graceful curves, are very rarely used in writing, their more complicated outlines being exceedingly difficult to make. This being the case, it is surely advisable to substitute simpler forms which are more easily imitated, possess greater legibility, and are more likely to secure rapidity. Compare, for instance, the elaborate forms in fig. 3 with the modified, more decided, and much simpler shapes in fig. 4.

FIG. 3.

FIG. 4.

Method of obtaining good writing

This concerns (1) the kind of apparatus used; (2) the position of the body and the holding of the pen; (3) the grouping of the letters for teaching; (4) the method of instruction employed.

1. *Apparatus.*—The most important article of school furniture is the *desk*, which should have a slightly sloping surface of not less than fifteen inches in width, with provision for ink-wells and pens. The seat should never be flat, but curved, and provided with a back rest. With regard to height, the following general rules should as far as possible be observed. If we suppose the pupil to be sitting in an upright position, with arms to the side, then the height of the seat should correspond to the height of the knee above the floor, while the edge of the desk nearest the body should be slightly higher than the elbows. The edge of the seat should be in a vertical line with the edge of the desk, thus securing a healthy position for writing.

2. *Position.*—The importance of insisting from the first upon the pupils maintaining the proper position for writing cannot be too strongly urged both for hygienic and economic reasons, it being impossible to secure good results if this essential be neglected.

The *body* should be in an easy position, directly in front of the writing, with the back straight, the shoulders level, and the chest well thrown out but not touching the desk. Support is given by the two arms, which should rest easily upon the desk, touching it just below the elbow.

The *pen* should be held between the thumb and the first two fingers of the hand, and pointing in the direction of the shoulder. It must not be grasped too tightly, nor held too near the nib, as this interferes seriously with freedom in writing. The flat part of the wrist should be towards the desk, which it must on no account be allowed to touch, the support for the hand being furnished by the tip of the little finger.

3. *Grouping of the letters for teaching.*—The introduction of Mulhäuser's system in 1840 was the first important attempt to teach writing upon sound principles. In this method the four elements of which the small letters were composed were taught first, next the letters were arranged in classes and taught in the order of their simplicity, and finally combined to form words. The copy-books were ruled in rhomboids to assist the pupil to determine the proportions and slope. Similar principles of analysis and classification are still adopted by most good teachers of writing,

though the elaborate rulings have been discarded as being too complex and furnishing too many aids to the pupil.

In the following classification of small and capital letters (fig. 5) simple forms have been adopted such as are calculated to promote a legible and rapid current hand.

4. *Method of Instruction.*—For all practical purposes it is only necessary to consider two methods of procedure : (*a*) where the copy is written by the teacher on the blackboard ; (*b*) where copy-books with engraved head-lines are used.

(*a*) The *first* is an excellent method where the writing of the school is *under the direction of one person.* The pupil is encouraged to attempt what he or she sees done, and is not weighed down by the feeling of an unattainable perfection which is frequently conveyed by the engraved head-lines of a copy-book. At the same time habits of self-reliance and observation are cultivated, as the pupil has not only to reduce the copy in size, but must also retain a visual picture of the appearance of the words. The copies can be more easily varied to suit the needs of the class, errors can be quickly illustrated and compared with the copy, while the writing from the copy can be more readily combined with dictated exercises. With elder pupils the best form of practice is to devote a short period only to the actual copying of the sample letters and words, and to spend the rest of the lesson in writing a legible and fluent current hand, keeping in view the letters or words written at the beginning of the lesson as the model for style. The principal objection to this method is that, unless the teacher is a good writer, inferior copies are put before the pupils, and mediocrity of style must necessarily follow.

(*b*) *The use of copy-books with engraved head-lines* is the method which is most generally followed. It is easily carried out with a minimum of trouble on the teacher's part, and the books are, as a rule, well graded and generally provide a suitable variety of exercises in the higher numbers. Probably one of the chief reasons for the adoption of this method lies in the fact that in many cases teachers are unable to write sufficiently well themselves. Where this method is unintelligently carried out and not combined with a free use of the blackboard, it is responsible for much bad writing and the waste of a considerable amount of valuable time, as unless the books are constantly inspected, the pupils are liable to form careless habits in writing, and to regard the lesson as mechanical, unimportant, and devoid of all interest.

To obtain the maximum results from the copy-book system, it

1. i u n m 2. o a d q

3. t d p q 4. l h b

5. j g y 6. v w r

7. c e s x 8. f k z

B R P P D I J T

T S S L L O A C

E Q N M U V W

X Y G G Z Z H K

Are Earn Dun On

FIG. 5.

must be combined with blackboard teaching and practice on plain ruled paper. The blackboard in the hands of a competent teacher will work wonders. It is the chief means by which *interest* in the writing lesson can be sustained; it should be constantly in use to demonstrate the principles, to point out the errors, and to show how the best results can be obtained. When the head-line has been copied, say three times, it should be repeated upon *plain paper*, and then compared with the writing in the copy-book. This practice is very valuable in cultivating habits of observation and in training the pupils' powers of remembrance.

In the *selection of copy-books*, of which there are a number of suitable ones published, the following points should be considered. The slope of the writing should approach the vertical; the forms of the letters, both small and capital, should be simple, clear, and bold, with the junctions arranged to secure continuity; the style should be free, but without exaggerated spacing between the letters.

The primary object in teaching writing is the cultivation of a good *small hand*; large hand, as such, is of very little value.

Size of writing

Pupils both young and old should be taught one shape only for each letter, and not, as is now very largely the case, allowed to make one form of letter for large hand, and a different one for small hand. It is advisable for younger children to write a larger size than is requisite for older pupils, but the width of the lines between which the letters are made should not exceed a quarter of an inch, and the only style of letters practised should be that used in the small hand. What is more absurd than to expect young children with their small hands to write copies of a size which would prove a difficulty even to those whose powers are more matured, and who possess a much greater control of the pen?

I. H. MORRIS.

DRAWING

It is but a few years since Drawing was regarded almost exclusively from two standpoints, either as an ornamental part of education, or as a subject possessing a certain commercial value in being a training for designers and craftsmen. In the former case it was considered as one of the accomplishments necessary to complete the pupil's school education. The ivy-mantled ruin done in pencil, the inanimate face worked up in chalk, the flower or the landscape depicted in colour, were generally the joint production of pupil and teacher (mostly the latter), and though often affording infinite satisfaction to the uninitiated parent, possessed no educational value whatever. In the latter case the severe, tedious, and uninteresting course of preparatory training in the copying of ornament in outline, crosshatching, stippling, and so on, was more likely to create a feeling of disgust with the subject than to develop either interest or originality.

Importance of drawing as a part of general education

These two aspects of the teaching of drawing, being neither educational nor attractive, are obviously unsuited for ordinary school purposes. There is now general agreement as to the necessity of including drawing in the school curriculum—not with a view of turning out designers, artists, and skilled craftsmen, but to secure its aid in the moral, mental, and physical education of the pupils. Its assistance is essential to secure the true object of education, the drawing forth of the powers which all possess in a greater or less degree, since the mind cannot be fully cultivated and developed without its aid.

Advantages resulting from the teaching of drawing

The visual, mental, and manual powers are cultivated in combination, the eye being trained to see clearly and judge accurately, the mind to think, and the hand to record the appearance of the objects seen, or the conceptions formed in the mind. Facility and skill in handicraft, and delicacy of manipulation, all depend largely upon

the extent to which this hand and eye training has been fostered. The inventive and imaginative faculties are stimulated and exercised in design, and the graphic memory is strengthened by practice in memory drawing. The æsthetic judgment is brought into use, the power of discerning beauty, congruity, proportion, symmetry, is made stronger; and the love of the beautiful, inherent more or less in mankind, is greatly increased.

As a means of expression and illustration it is unequalled. Through its instrumentality the artist can appeal to the emotions, the inventor can exactly express his ideas, while the ordinary person constantly requires its help in the needs of everyday life. No matter how diverse the tongues, drawing is a common language throughout the world. In addition, when properly taught, it is exceedingly attractive and fascinating, providing a welcome change from the ordinary routine of school work, and allowing certain faculties needful rest while calling others into play.

Correlation of drawing with other studies

It is frequently urged, and with a show of reason, that the comparatively short period of school life does not permit of much time being devoted to the teaching of drawing. This objection is largely due to the want of proper correlation between the various subjects of the school curriculum. A large amount of valuable time may be saved, and a vast increase of interest in the work and effectiveness in the teaching may be secured, by proper attention being given to this important element in the economy of teaching. Why should the drawing lesson be almost entirely occupied in practising the drawing of forms which have little or no connexion with the other subjects taught in school? Outlining with the pencil, pen, and brush, and the modelling in clay, of leaves, flowers, fruits, and animal forms may be used to illustrate botany, zoology, and kindred sciences; the drawing of instruments and diagrams is of great service in the study of physics and chemistry; the copying of diagrams, plans, maps, weapons, dress, &c., helps to make permanent the lessons on geography and history; while geometry is called into use for graphic methods of calculation. The pupil who has drawn the beautiful heart-shaped leaf of the black bryony side by side with the more slender, sharply pointed leaf of the arrowhead, will clearly comprehend why the terms 'cordate' and 'sagittate' are used by botanists. The narrow, graceful-oval outline of the swallow's body, so suggestive of rapid motion, may be compared with the broader and rounder contour of the less active domestic fowl; or the long-pointed ovate form of the swift mackerel with the wider and

blunter shape of the sluggish plaice. These suggestions may be amplified by the teacher to an almost unlimited extent, and will furnish copies for drawing quite as suitable and far more interesting than the patterns of conventional ornament at present so largely in vogue, and at the same time make the impressions left by other lessons more permanent. It is not, of course, suggested that instruction in drawing should be entirely confined to exercises of this description; such a course would be neither desirable nor truly educational; method, proper gradation, and knowledge of principles must still receive due attention. It is rather in the character of the exercises, and in the application of the principles, that drawing may be made of such valuable service to other branches of education.

Existing schemes of teaching drawing in schools

Of the various schemes of drawing in operation in schools it is only necessary to notice those which provide a systematic course of instruction running through the school life of the pupil, and which can be adapted to class or collective teaching. Method in the teaching of other subjects has long been recognised as indispensable to success, but only of late years has it been regarded as a necessity in the teaching of drawing. What may be termed the grammar of art may be taught collectively just as easily as the principles of arithmetic. This collective teaching arouses the intelligent interest of the pupil, is the best means of creating that enthusiasm in the work without which the most skilful teaching is to a large extent ineffective, allows of easy and rapid illustration of defects and demonstration of proper methods of procedure, and affords a great saving of time to the teacher. To make it successful there must, however, be a suitable classification of the pupils, a capable and sympathetic teacher, and a clear view by all of the object to be drawn.

We may take it that there are three important schemes which are systematic and adapted to class-teaching: 1. What is commonly called the South Kensington System, which is in operation in the Primary Schools, many Secondary Schools, and the Art Classes and Schools of Art under the Science and Art Department. 2. The system of which Mr. E. Cooke is the able exponent, and which has lately been adopted by the Science and Art Department as an alternative scheme for Elementary Schools. 3. The system advocated by the Royal Drawing Society of Great Britain and Ireland, originated by Mr. T. R. Ablett, and carried out in many Secondary Schools, including those belonging to the Girls' Public Day School Company.

1. The South Kensington scheme is by far the most widely spread, and is so well known that it needs but a brief description. It provides a carefully graduated course of instruction in elementary drawing for the Primary Schools, divided into seven stages, and dealing with children between the ages of seven and thirteen. The syllabus includes: (*a*) *Freehand Drawing* from the flat, beginning with straight lines and angles, and gradually advancing to more elaborate copies of ornament. (*b*) *Geometrical Drawing* of simple figures and patterns with the aid of the ruler and set square, the construction of simple scales and copying to scale of figures from given dimensions, easy plane geometry, and plans and elevations of simple solids. (*c*) *Model Drawing* of solids of regular form, easy vases, and common objects. (*d*) *Drawing in light and shade* of simple casts and common objects.

The South Kensington system

This course is fairly well graded and systematic, and for the higher classes contains much useful matter, especially with regard to the more technical application of the subject. It cultivates eye-judgment and skill in line drawing, and may be regarded as a valuable preparatory course to the more advanced drawing of the art classes and schools of art.

The serious *objections* to this system are: (*a*) The great lack of attractive matter, particularly in the earlier portion of the syllabus, which is monotonous and uninteresting where it should be varied and attractive, and where it is of the greatest importance that a liking for the subject should be fostered. (*b*) The omission of practice in design, which should be cultivated from the earliest stage and carried on throughout, instead of being introduced after a long and difficult course of technical training which is certain to deaden the imaginative faculties and to check originality. (*c*) Too much weight is attached to the drawing of models of regular form, especially in what is termed the second stage of drawing. Common objects receive but scanty attention, while memory drawing and the forms of animal and plant life are altogether excluded.

2. The alternative scheme is drawn up on lines totally different from the preceding course. A distinguishing feature is the introduction of drawing at arm's length, the pupil working freely from the shoulder upon a nearly upright board or slate, with chalk or other soft medium, and producing bold free curves of elliptical and oval shapes, the object being to secure freedom and control of hand. The scribble of the child is a curve more elliptical than circular, hence this curve is taken as the starting point rather than the straight line and arc. The typical form in animal and plant life is more or less oval in shape.

The new alternative syllabus for elementary schools

In buds, leaves, fruit, and fishes, there is generally one ovate form as in fig. 6; birds usually present two—the head and the body, as

FIG. 6.

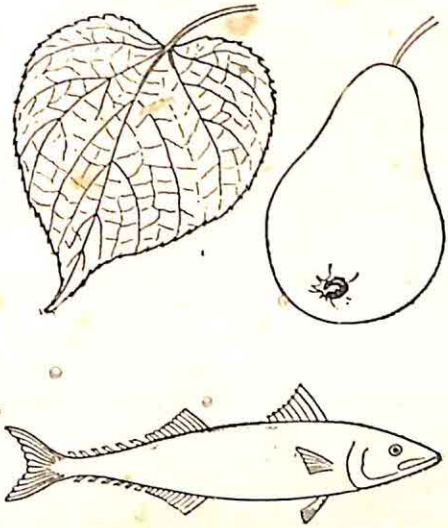
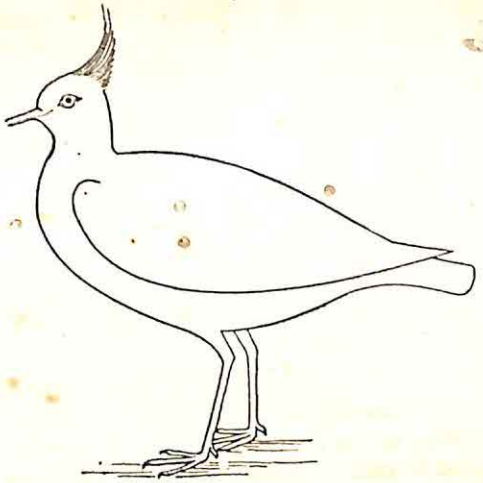


FIG. 7.



in fig. 7; while in mammals there are three—the head, the chest, and the portion around the hips, but the ovals are not so clearly defined.

The course is well graduated, varied, and attractive. Due provision is made for practice in design, brushwork, geometrical, and memory drawing, while the drawing of both natural and common objects takes the place of the drawing from models of regular form required in the previous course.

The *freehand drawing* includes both curved and straight-line forms, beginning with elliptical and oval curves drawn boldly, both from the right and from the left, in varied sizes, positions, and combinations.

FIG. 8.

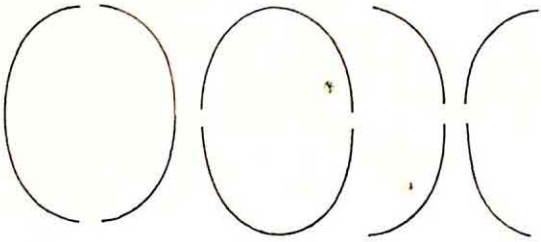


FIG. 9.

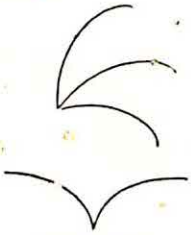


FIG. 10.

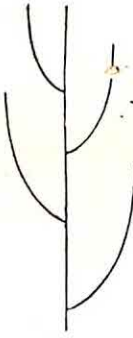


FIG. 11.

FIG. 12.

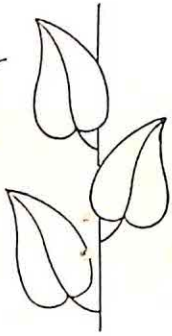
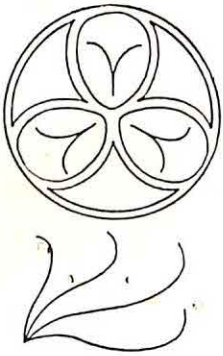


FIG. 13.



These forms are then analysed into halves and quadrants as in fig. 8, and these elements treated as regards position, size, &c., in the same manner as in the whole form, and afterwards built up into decorative figures and patterns as in figs. 9 to 13, gradually increasing in difficulty, and introducing the circle in combination with the ovate forms. Straight-line forms are also drawn as free-hand exercises, as well as with the aid of the ruler, while both curves and straight-line exercises are combined with practice in colour

and brushwork. It may be pointed out that the varied and graceful outlines of Greek vases, ornament, and mouldings, are due to the employment of these beautiful elliptical and oval curves.

Drawing from memory is introduced from the first and carried on throughout the course, the pupils drawing objects which they have seen, or repeating the freehand exercises. This is a valuable exercise in training the pupils in habits of observation and in remembering methods of procedure, as well as of great assistance in design.

In *geometrical drawing* the course is somewhat similar to that provided in the first scheme, but treated with more freedom, and containing the important addition of the adaptation of the geometrical forms to design and ornament.

The *drawing of objects* includes drawing from large copies as well as from the object itself, beginning with simple objects such as a jar or a flowerpot, and advancing to the drawing of more difficult models, leaves, parts of plants, &c. The copying from the flat is not limited to the drawing of ornament and easy objects, but includes the simple rendering of insects, birds, and animal forms.

Design, like memory drawing, is carried on from the beginning of the course, constant practice helping to develop and increase the powers of imagination and invention. The pencil, crayon, tinting in colour, and direct drawing with the brush, are all introduced as aids to this valuable part of the scheme.

Brushwork is one of the most important features of the course, and is introduced at an early stage, as it gratifies the strong desire for colour which is present in most children. It includes flat tinting and direct brushwork.

Colour-tinting is interesting and easily taught. It is a valuable means of emphasising shape and cultivating the power of copying and harmonising colours, besides being of considerable use in the arts.

Direct brushwork cultivates freedom in drawing and gives great power of hand and delicacy of touch. It requires a good apprehension of form and acquaintance with objects, and possesses a higher educational value than flat-tinting. As a means of expression the brush has an advantage over the pencil, as it can be used to represent mass and space as well as line, while its flexibility allows of variation in the thickness of line as well as the direct formation of various ovate and curved forms.

When the brush is charged with colour, held horizontally under the hand and pressed upon the paper, forms similar to figs. 14 and

10 are produced. These should be repeated in a variety of positions and afterwards combined into simple patterns and conventional forms, as in figs. 15 and 16. The pupil should practise

FIG. 14.

FIG. 15.

FIG. 16.

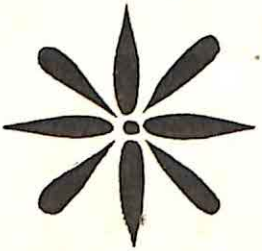
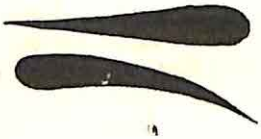


FIG. 17.

the use of either hand in this exercise, as those forms in which the point is towards the right, as in fig. 15, are made more easily by using the left hand. If the brush be slightly twisted when pressed upon the paper, the forms will be curved, as in fig. 18. When the brush is dragged before removing from the paper, longer forms are made, as in fig. 19. By holding the brush in the ordinary position, and varying the pressure upon the point, a still greater variety of

FIG. 18.

FIG. 19.



curved forms may be obtained, such as those shown in fig. 20, all of which must be drawn by a single direct stroke without the aid of flat washes. These figures are merely suggestive of a few of the infinite number of ways in which brush forms may be utilised. They may be combined to form decorative ornament, as in figs. 21 and 22, or they may be used to represent plant and animal life as in figs. 23 to 27. The exercises should include the rendering of forms from nature, as well as from the copy and from memory. In the earlier practices in brushwork it will be found advantageous to use squared paper, as by this means order, proportion, and accuracy may be more easily secured.

FIG. 20.

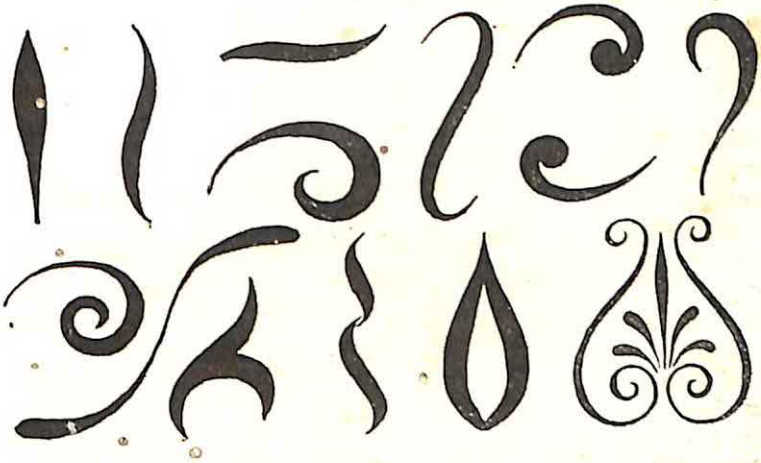


FIG. 21.

FIG. 22.

FIG. 23

FIG. 24.

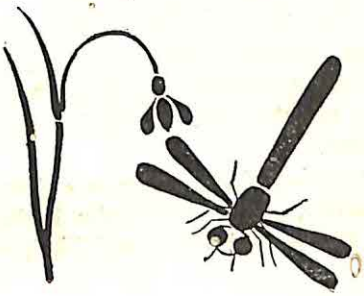
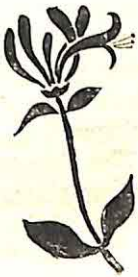


FIG. 25.

FIG. 26.

FIG. 27.



3. The Royal Drawing Society scheme is drawn up with a view of 'promoting the teaching of drawing in schools as a means of general education.' The syllabus is wide, varied, and methodical, and provides a course which is both interesting and attractive, and calculated to develop the general powers as well as to exercise the hand and eye. It includes a preparatory course for children under the age of eight or nine, and a course for older pupils which is divided into six portions.

The system advocated by the Royal Drawing Society

In the *preparatory course* the drawing chiefly consists of graphic representations of objects interesting to children, drawn in whole or part from the teacher's direction, together with simple ruling, memory, and brushwork exercises.

The *course for older scholars* includes (*a*) memory drawing, dictated drawing, judgment at sight, outline drawing from the flat, drawing of foreshortened curves and more advanced drawing from objects; (*b*) drawing from growing plants, casts, fruit, and vegetables; (*c*) simple geometric design and designing; (*d*) shading from models, objects, and casts; (*e*) water-colour painting from coloured objects, and the drawing of heads from the cast. For boys' schools geometry is suggested in place of design.

One of the special features of this course is *memory drawing*, which is carried on throughout, beginning with animal forms—birds, fish, mammals, &c., and continuing with straight line and curved objects, plant forms, shading and painting of simple objects, and the drawing of heads from the cast. This exercise, though difficult, is undoubtedly a most valuable means of cultivating habits of observation, and training the graphic memory. The subjects to be drawn are announced each year for the following year, so as to afford opportunities for study.

Dictated drawing is practised in the earlier portion of the course, and embodies a general knowledge of the terms, and acquaintance with the figures used in elementary geometry. It necessitates exactness of language on the part of the teacher, and accustoms the pupils to working from verbal directions, a valuable means of training which is too little practised, and, in addition, affords a good method of testing whether the subject has been intelligently and thoroughly mastered.

The drawing, shading, and painting from common objects, growing plants, fruits, vegetables, &c., carried on in the higher portions of the course, are both attractive and useful, and likely to create a taste for the subject.

As a means of general education the course is probably more suitable for secondary schools (especially those for girls) than the South Kensington course, though the character of the exercises in some parts of the syllabus appears to be lacking in freedom and boldness. In the case of boys' schools, the substitution of practical and solid geometry for design does not appear to be desirable. Both subjects should be included in the course of drawing for boys, and relief obtained if necessary from other parts of the syllabus.

Enough has been said as to the value—nay more, as to the absolute necessity—of including instruction in drawing as a part of the ordinary school routine. The exigencies and character of the school must to a certain extent determine the course to be followed. The scheme adopted should be well graded, valuable from an educational point of view as affording a means of developing certain powers, and arranged as far as possible so as to aid other subjects of study; while it must be attractive in order to secure the greatest amount of interest on the part of the pupils. If it be deemed desirable to present the pupils for examination, then one of the foregoing schemes must be adopted; if, however, this is not an important consideration, the following course is suggested as suitable for pupils between the ages of ten and sixteen: (*a*) freehand drawing of curved forms, ornament, and objects from the flat, the cast, and the object itself; (*b*) drawing from regular models, common objects, casts, and plants; (*c*) memory drawing; (*d*) geometrical drawing and design; (*e*) shading and painting. The course is divided into six stages, each furnishing a year's work. The extent to which the instruction in each stage is carried must depend largely upon the character of the teaching and the time allotted to the subject. It is of greater educational value to carry on instruction in each of the different branches of the subject, rather than to confine the teaching to one or two portions only.

Suggestions as to a suitable course of drawing

Stage I. (*a*) Freehand drawing of oval and elliptical forms, their combination to form easy patterns and simple representations of vegetable and animal life; the drawing from large copies placed before the class. This second exercise provides a most valuable training in eye-judgment. The pupils should here be shown how to ascertain the proportions of the figure, first with the eye, and then verifying by measuring with the pencil held at arm's length between the eye and the copy.

(*b*) The drawing of easy models of regular form, such as cube, cylinder, square prism, and the objects of similar shape in *easy*

positions. Thus the drawing of the upright cylinder should be followed by the drawing of easy vases, jugs, glasses, &c.; while such objects as the box and book should follow the cube and square prism.

(*c*) Brushwork, both direct and the flat tinting of patterns. This exercise is always very attractive, and may be used in connection with both freehand and geometry.

(*d*) The drawing of simple geometrical figures such as triangles, parallelograms, regular polygons and frets, by the aid of the ruler and set-squares, and the combining of these figures to form simple patterns which may be tinted or filled with brushwork forms.

(*e*) Memory drawing. The copies and objects used in sections (*a*) and (*b*) will furnish suitable subjects for this exercise.

Stage II. (*a*) More advanced exercises of a similar character to those in Stage I.

(*b*) As in Stage I., but in more difficult positions. The objects should be placed both above and below the level of the eye.

(*c*) More advanced brushwork, introducing drawing in outline with the brush, and representations of simple plant forms and decorative combinations such as those in figs. 20-27.

(*d*) The drawing of simple objects to scale from actual measurement and from figured sketches.

(*e*) Memory drawing.

Stage III. (*a*) More advanced exercises in freehand, with the introduction of the drawing of leaves, fruit, and parts of plants from the actual objects.

(*b*) The drawing of simple groups of models and common objects, such as a book with a glass, a bottle and a brick, and other similar combinations.

(*c*) Brushwork continued and applied to decorative patterns and design.

(*d*) Geometrical drawing.—The construction of angles, parallels, simple figures, and polygons, and their combination into patterns.

Geometry and freehand may be combined to a great extent, the geometrical figures forming the foundations for designs. As an illustration, take the circle, divide it into five sectors: on this groundwork we may construct a rosette. By varying the curves a great number of patterns may be formed on this one foundation alone.

(*e*) Memory drawing.

Stage IV. (*a*) The drawing of objects and animals from the flat, with drawing from the cast and from easy plant forms.

(*b*) More advanced drawing of objects. Also *drawing with the pen* to cultivate precision.

(*c*) Brushwork, using various colours.

(*d*) More advanced geometrical drawing.

(*e*) Memory drawing of plant forms.

Stage V. (*a*) Drawing and shading from the cast and object with pencil, pen, and brush.

(*b*) Geometrical drawing, its application to design.

(*c*) Memory drawing in light and shade.

Stage VI. (*a*) Water-colour painting from the flat and from the object.

(*b*) Designing.

(*c*) Geometrical drawing, including plans and elevations.

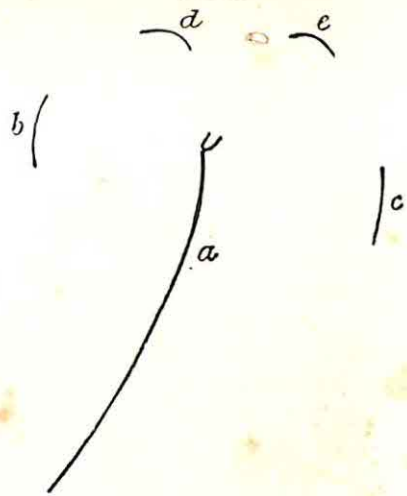
In girls' schools the geometrical drawing of Stages II., IV., V., and VI. may be omitted if thought desirable.

The scope of this manual will not permit of lessons illustrating the method of teaching the various branches of the subject; more detailed information may be obtained by referring to the list of works given at the end of the chapter.

Method of procedure

Generally it may be said that the constant and judicious use of the blackboard will do more to arouse the enthusiasm and to sustain the interest of the class than any other means. It is the readiest way of showing right methods of working, and of pointing out common defects. This is more especially the case in the earlier stages of teaching drawing, when the pupil is learning the uses and capabilities of the various instruments and materials, and when fresh difficulties are constantly arising.

FIG. 28.

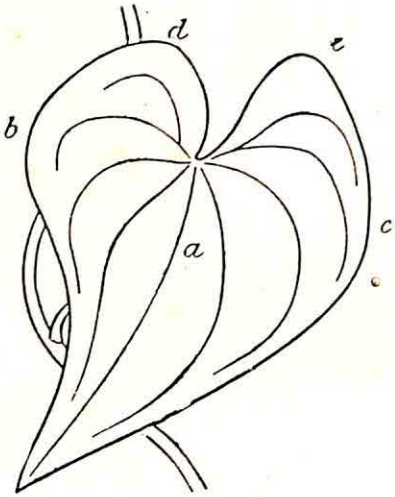


The general method of teaching to be followed is indicated in the following suggestions. The object chosen is a leaf of the black bryony, the general outline of which is simple and formed of bold curves. A large copy should be placed before the class, or a number of leaves, as nearly alike in outline as possible, arranged so that each pupil may be able to see them clearly.

1. Attention should be called to the general form of the leaf, and to the position of the midrib (*a*, fig. 28). This should be

drawn first, after noting its direction and curvature. Where is the widest part of the leaf? Compare this width with the length of the midrib and mark *b* and *c*. Notice the height to which the curve of the leaf rises at *d* and *e*, and mark these points.

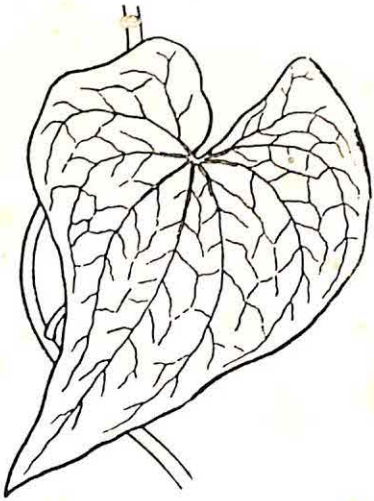
FIG. 29.



2. Sketch in the general outline boldly, as in fig. 29. Draw the stalk, noticing carefully the manner in which it is joined to the stem of the plant. Count the number of ribs on each side of the midrib. Observe how the curves radiate from the base, sweep round, and finish nearly parallel to the edge of the leaf, and lightly draw them in.

3. Next point out that the margin of the leaf is somewhat irregular. Mark the larger bends, and draw in the outline carefully, as in fig. 30. Complete the drawing by inserting the smaller veins, observing their reticulated structure and the manner in which they branch from the ribs. Directions should be given as to the drawing of the outline in firmer line, while the ribs and veins require a more delicate rendering, the lines gradually dying away.

FIG. 30



A lesson given in this fashion not only sustains the interest of the pupils, but also keeps the mind on the alert, and helps to cultivate those habits of observation which are so essential to the acquirement of accurate knowledge.

A list of books is appended, from which more detailed information concerning the various branches of the subject may be obtained.

Books of reference

General.—'The Illustrated Syllabus for Drawing in Elementary Schools, with the Alternative Syllabus' (Eyre and Spottiswoode), 4½*d.*; 'Science and Art Directory' (Eyre and Spottiswoode), 6*d.*; 'Syllabus for Schools' (Royal Drawing Society, 50 Queen Anne's Gate, S.W.); 'Copies of the Examination Papers' (Royal Drawing Society, 50 Queen Anne's Gate, S.W.), 1*s.* 6*d.*; 'Neglected Elements in Art Teaching,' paper by E. Cooke ('Transactions of the Education Society,' 1887); 'The Teaching of Drawing,' Morris (Longmans and Co.), 4*s.* 6*d.*; 'Elementary Art Teaching,' Taylor (Chapman and Hall), 10*s.* 6*d.*; 'How to Shade from Models,' Sparkes (Cassell and Co.), 3*s.* 6*d.*; Cusack's 'Shading' (City of London Book Depôt), 3*s.* 6*d.*; 'Geometrical Drawing for Art Students,' Morris (Longmans and Co.), 1*s.* 6*d.*

Brushwork.—'Drawing with the Paint Brush,' Mrs. R. Hill (O. Newman), 5*s.*; 'Course of Brushwork,' Mrs. Steinthal and Miss Leach (E. J. Arnold, Leeds), 1*s.* 6*d.*; 'Brushwork Drawing,' Vaughan (Moffatt and Paige), 3*s.*; 'Colour-work,' Ricks and Vaughan (Cassell and Co.), 3*s.*

Design, Ornament, &c.—'Ornamental Design,' L. F. Day (Batsford), 10*s.* 6*d.*; 'Nature in Ornament,' L. F. Day (Batsford), 12*s.* 6*d.*; 'Principles of Ornament,' Ward (Chapman and Hall), 7*s.* 6*d.*; 'Decorative Design,' Jackson (Chapman and Hall), 7*s.* 6*d.*; 'Theory and Practice of Design,' Jackson (Chapman and Hall), 8*s.* 6*d.*; 'Flora's Feast,' Walter Crane (Cassell and Co.), 5*s.*

Colour.—'Flowers and How to Paint Them,' Maud Naftel (Cassell), 5*s.*; 'Figure Painting in Water Colours,' Moore and McArthur (Cassell), 7*s.* 6*d.*; 'Tree Painting in Water Colours,' Boot (Cassell), 5*s.*; 'Simple Lessons in Flower Painting,' Vere Foster (Blackie), 3*s.*

I. H. MORRIS.

MATHEMATICS

Definition

MATHEMATICS is a term applied to the science whose object is the discovery of the relations of number and magnitude, and their application to natural phenomena.

Utility in education

The utility of mathematics as a means of education has been recognised ever since the advantages of systematic education came to be acknowledged. It has been generally admitted that the study of the mathematics is invaluable first, because of the habits of mind that it forms; secondly, because of the discipline of faculties that it affords; and thirdly, the study is a necessity because of the utility of its facts and processes in business of all kinds, in manufactures, and in construction, and in scientific research.

The command of the attention

As regards the first point, it may be noted that the pursuit of mathematics gives command of the attention. A successful study increases or creates the power of concentrating the thoughts on a given subject and of separating mixed and tangled ideas. The habits of mind formed by means of this one set of studies soon extend their influence to other studies and to the ordinary pursuits of life. The man or woman who has been drilled by means of mathematics is the better able to select from a number of possible lines which may be suggested that which is easiest or most direct to attain a desired end.

Discipline of the reasoning powers

The second purpose of this study is the one which has been most universally acknowledged in all ages, namely, the strengthening and training of the reasoning powers. The methods and forms of reasoning which are here employed admit of being checked stage by stage, so that we can know for certainty whether the results are true or false. This is a necessity so long as the reason is not the instructor

but the pupil. The means which are afforded for testing and checking the accuracy of the processes gives confidence in the processes themselves until at last they come to be safely relied on even in matters which do not admit of independent test. The foundations are laid in the first place by certain simple first principles which although derived from observation are easily accepted and admitted to be true; in fact, they can be treated as self-evident. In the second place, the terms used admit of such distinct explanation that the possibility of a double or doubtful meaning is entirely removed. On these foundations the demonstration is then built up logically, and nothing is left to mere probability or is allowed to rest on authority or opinion. The superiority of mathematical study as a discipline of the reasoning powers is mainly due to this distinctness.

The handmaid of all the sciences

The third point of value in mathematical study, namely, the practical uses made of the facts which they bring together, needs but little comment. Skill in calculating, evaluating, and measuring is always in demand. The actuary the engineer, the architect, the surveyor and valuer, and many others all live by using it. Again in nearly all scientific researches mathematics necessarily enters at some stage or other. As soon as strict measurement or numerical statement can be made in any science, then the science enters on a mathematical phase; and precision, exactness, and proportion are as a consequence secured for it. No true knowledge can dispense with these, and consequently mathematical science is the handmaid of all the other sciences, and it is also the guide. It has climbed the mountain of truth higher than any other, and those other sciences advance furthest and surest who follow the paths which this one has laid down and the directions which it has inscribed on every path for the guidance of those who follow it.

The right aspect of the plea of utility

But there may be an excess of attention to the plea of utility. The history of philosophy, which gives us the views of successive generations of thinkers and also a consideration of the views of our own contemporaries side by side, shows that there are two extreme kinds of mental form; one which despises the practical and revels in abstract notions, and the other which is satisfied only by truths connected with concrete things. The teacher of elementary mathematics will not aim at developing any extreme or one-sided form. He must attend to the practical needs of the engineers and calculators of all kinds, but he will place no limits to abstract reasoning on questions of

number, order, or position, for these give us our first outline sketch of the universe. It must, however, be admitted without reserve that mathematical theory is in the first instance suggested by questions of common life or of physical science; while it is being established in the mind of the young student, and is giving strength and confidence to his reasoning powers, it cannot be separated for long from the region of experiment and observation. When, however, the instruments by which it operates have been fully proved, it may be pursued and studied quite independently of its applications to common things. The history of mathematics, however, shows us innumerable cases in which, after the independent course has been pursued, perhaps for a long interval of time, it closes contact again with the practical, and in return for lending its aid, it is itself strengthened by the contact. Hence history forbids anyone to predict that even the most abstract and imaginary of the branches of advanced mathematics has diverged so far from the practically useful that the two cannot be expected to meet again.

The most abstract notions of the higher branches are not without utility. Such notions furnish mental exercise and recreation, and it is always within the range of possibilities that they may lead to new points of contact between mathematics on the one hand and the arts on the other. Branches of the science that were once regarded as absolutely distinct have, indeed, been found to possess connecting links, and we may expect not only that things now beyond our perception may be brought within our knowledge, but also that facts and theories now standing wide apart may be found to be intimately related.

The classification of mathematics for educational purposes

It has been usual to divide mathematics into two branches, viz. pure, and mixed or applied. The pure mathematics include notions of time and space only, while mixed mathematics to these add notions of matter. The presence or absence of notions of matter was the essential difference between pure and mixed mathematics. But it is well for teachers to recognise early that there is no real difference in the nature of the evidence on which the truth of the first principles of mathematics depends, however they may be applied. In every department of mathematics the results are obtained by strictly logical deduction from a few first principles explicitly assumed. The so-called mixed mathematics apply the conclusions and processes of pure mathematics to natural objects, and consequently presuppose some knowledge of the properties of

these objects derived from the senses. But, strictly, mathematical processes of deduction in the pure and mixed mathematics are identical, the difference between the two sciences being, not in the rigidity of the reasoning, but in the connexion of the principles with other laws or facts. In mixed mathematics we are often presented with conclusions derived from hypotheses regarding the constitution of matter. If we ask whether these are correct conclusions from the assumed hypotheses, our investigation must be conducted on principles purely mathematical; but if we inquire whether the conclusions have a real existence in nature, we must appeal to observation. It is from this mixture of mathematical deduction with experimental processes that the mixed sciences are entitled to their name, and not from any difference between their mathematics and those of pure science. Hence, as regards the functions of mathematics in education, this classification is useless, and there is a more suggestive one deducible from educational experiences only.

Natural classification of mathematical subjects for educational purposes

We may obtain a better classification by means of our experiences in the Kindergarten. Here there are no other theories to hamper the teacher than such as are suggested by the natural activities of the child. Here the laws of the learner's being govern the educator's action, and determine what he does and what he leaves undone. The true Kindergarten teacher ascertains from the child himself how to conduct his education. It will be useful to ask at this stage, therefore, whither such a teacher is led by experiment and observation in this his own field.

The foundations of mathematics are laid by two kinds of exercises, one dealing with number and quantity, the other with magnitude and shape. These two courses begin together and go on together. They should in fact never be again entirely separated. The classification of mathematical subjects for educational purposes which this experience suggests is a simple division into two parallel lines, one containing subjects allied to Arithmetic and Algebra and their applications, and the other allied to pure Geometry and its applications. In later studies, when specialisation begins, some students will probably give a greater attention to one line than to the other. Some will prefer a geometrical or graphic method of representing and tracing out the laws dealt with; others will find that Algebra has, for them, the greater power. But no such preference should be encouraged at first. We should endeavour to make the children in this respect 'two-handed.' When they begin

to count, they should also begin to recognise and describe differences of shape. The growth of each division should be continuous from this point, although the two courses should be allowed to assist each other as often as possible.

As they extend, each will grow into the other until there will exist really no essential difference between the two. Geometry will then be only one manifestation of Algebra, and Algebra, at least as regards its dimensions, will be contained in Geometry. Moreover, there will be great advantage in the frequent importation of the methods of one course into the other. The teaching of Algebra too often lacks the features which are too rigidly maintained in Geometry. In fact, when we come to consider the details of these subjects, we shall find reasons for thinking that we have not improved as much as we might on traditional and mediæval modes of teaching, in consequence of our keeping the two lines of subjects too much apart.

The natural order of subjects in the two parallel columns can easily be traced. Arithmetic must precede Algebra, and this again must be carried some distance before Analytical Geometry can be commenced. The following order of beginning will in this way be established, it being understood that what is first commenced is not suspended when another branch is opened.

Allied to Algebra.	Allied to Geometry.
1. Counting and numbering.	1. Cutting paper figures, forming, moulding, or building up different shapes.
2. Arithmetic.	2. Kindergarten Geometry.
3. Arithmetical Algebra.	3. The relations and measurements of simple figures.
4. Algebra.	4. Euclidean Geometry.
5. Trigonometry.	
6. Algebraical Geometry.	6. Geometrical Conics.
7. Kinematics.	7. Graphic Statics.
8. Dynamics including Statics.	8. Kinetics and General Mechanics.
9. Mathematical Physics.	
10. The theory of Equations.	10. Solid Geometry.
11. The Infinitesimal Calculus.	11. Projective Geometry.

Before leaving this part of our subject we may remark that although the educational methods which are associated with the name of Froebel have been brought very near to perfection in

the Kindergarten, they are to a great extent suspended when the pupil passes from the Infant School. They reappear, however, in the schools and colleges devoted to Technical and Experimental Science. The graphical and synthetical methods of comparing results and tracing laws, which have been extensively developed in these colleges, are but an advanced application of the Froebellian methods which open our right-hand column. It is very desirable that we should bridge over the gap by supplying a course for practice in graphical methods for students who have just mastered the beginnings of Algebra and Euclid.

Extension of Froebellian methods

The charm of these methods will always be, as in the Kindergarten, inherent in their nature. They give something to be done by the hand and followed by the eye, keeping pace with the course of thought and reasoning. The proof of a rule or law often lies entirely in the process by which the rule or law is graphically illustrated, and the consequence is that the pupil, while following the course, is constantly on a voyage of discovery, and has all the pleasure and stimulus of an original investigation.

In considering further the method of teaching to be adopted, there are a few general principles applicable to this and other sciences, and a few specially applicable to this science, to which it will be well to give definite expression.

(*a*) The use of the history of Mathematics.

(*b*) The necessity of providing at the same time for many who will have to begin the work of life early and for the smaller number of those who will be able to proceed to the highest mathematical studies.

(*c*) A law of Association.

(*d*) The use of reasonable and practical approximations.

(*e*) The advantages of a decimal system and of working by decimals.

(*f*) The choice of methods.

Teachers of mathematics may gain much assistance from a knowledge of the history of mathematics. The current of achievement in this branch of science is a trustworthy record of general intellectual progress. The development of the general intellect through the historic centuries resembles that of the individual mind. The readiest and simplest observation and the conclusions from observation are the first arrived at, and these are used to find others more subtle or more remote.

Use of the history of mathematics

The order of subjects as they are chronologically arranged in the history of research would therefore be an approximate guide as to the order in which these science subjects should be presented to the student.

Again, the interest of the student may often be very considerably augmented by historical facts connected with the subjects. Even the cold logic of geometrical demonstrations receives heightened warmth and colour from association with accounts of failures and successes.

The history makes it clear that mathematics is a living science differing from many others by the continuity of its progress, by its apparently unlimited scope, and by the fact that very little has had to be thrown aside. The geometry of the Greeks and the arithmetic of the Hindoos are as attractive, useful, and admirable now as in the days of their beginning. Hardly anything ever done in mathematics has proved to be useless, and therefore, to quote Mr. J. W. L. Glaisher, 'no subject loses more than mathematics by any attempt to dissociate it from its history.'

Consequences of the uncertainty as to the age of leaving school

There are two practical conditions arising from the uncertainty which must exist in all cases except those of the wealthy as to the length of time during which the student can continue his mathematical studies. This uncertainty gives us two suggestions which at first sight seem to take opposite directions. It would evidently be uneconomical and injudicious to linger over the early rules until they were completely exhausted and the more complicated questions under them could be dealt with. A similar error would be committed in teaching history if the student were turned out with an elaborate knowledge of the history of Roman Britain and Saxon and Norman England but with no knowledge whatever of the events of the last few centuries. It is better to go forward with the easier and less elaborate parts of each subject, and to return again and again as time permits to add to the first reading. This view is very well applied in the code of the elementary schools as regards arithmetic, where the work of the various standards is made to overlap with a strict limitation to the lower numbers in the first treatment of a rule. But there is the second consequence of this uncertainty. Some scholars who at first expect that they will be compelled to begin to work at an early age, fourteen for instance, will find, when that age is reached, that means are at hand by which they can continue their studies.

The teaching of the earlier rules should be a sound preparation for all who can carry the studies into the higher subjects. But from both these points of view we are urged to make the most we can of the discipline to be derived from arithmetic and simple geometry. If it is important that the earlier treatment of these shall prepare the way for higher studies in the case of the minority who will reach them, it is still more important that those who form the majority, and who have no other mathematical training than that which can be gained by means of the first subjects of the two divisions of our list, shall have these subjects presented to them in a strictly scientific and logical manner. Hence it should be an axiom of the schoolroom that the study and practice of every rule shall be accompanied by explanation of the principles on which it rests.

'Rules of Thumb' to be avoided

The law of association of which the teacher learns to make so much use also gives us some suggestions as to methods which are occasionally lost sight of. It often happens that several methods of treating or explaining a rule present themselves. Should we always adopt that which seems at first sight the simplest? The advantages to the memory and to the reason of finding connecting links and common foundations will perhaps modify our first choice, and will lead to the selection of the particular methods that tend to connect most rules together and have most applications to the advanced parts. For example, it may seem at first sight a matter of small importance whether in simple multiplication we begin with the figure on the right or the figure on the left, but the importance is vastly increased when other rules of arithmetic and algebra are consulted. The order from left to right should be chosen because:

(i.) It is the natural order of things; we say, four hundred, sixty and seven, not seven, sixty and four hundred.

(ii.) The reason for the rule is more easily expressed.

(iii.) The same method may be applied in compound multiplication of either money or weights and measures, and the reasons for the steps are there made more obvious. Thus 367 would be treated as $(3 \times 10 + 6) \times 10 + 7$.

(iv.) The process is identical with that which leads to the foundation of all methods of approximation to the roots of equations.

(v.) In the multiplication of decimals to a given degree of approximation this order is necessary.

We have but to place the first figure under the figure by which we multiply, and we may multiply by the figures of the multiplier in any order, and can then take the order most convenient. For

instance, if the multiplier be 842, we may begin with the 2, double the result for the next line, and double that again for the third. But when there is no particular reason for departing from the general rule, it is well to begin with the figure of highest denomination.

The needs of the science student as regards arithmetic emphasise this recommendation; they involve a ready means of approximation, the use of proportional parts, and familiarity with the metric system. Decimal arithmetic worked with attention to the required degree of approximation assumes for such students great importance.

Approximations

Nearly all measurements are approximations only, and the degree of approximation required must be borne in mind; and to save time and effort, no more figures should be introduced into the process than are needed to produce the necessary degree of accuracy. In purely mercantile questions it is useless to calculate sums to be paid or received to a greater degree of accuracy than the nearest farthing, and generally the nearest penny is a sufficiently close approximation. No more figures should be used than are necessary to give the required answer to that degree of accuracy.

Reduction upwards to decimals of a pound rather than reduction downwards to pence is to be preferred; and generally it is a disadvantage to increase the number of figures representing a given quantity. Thus £1 is more easily dealt with than 240 pence; 1 mile is a more convenient measure than 1,760 yards. Hence we should change pence to pounds rather than pounds to pence; and generally we should take it as a rule that there is an advantage in changing units of a lower name for equivalent units of a higher name as soon as possible, while, on the other hand, there is a disadvantage in changing the higher units for the lower before it is absolutely necessary to do so.

Reduction upwards generally preferable to reduction downwards

This consideration shows the value of decimal arithmetic with contractions and approximations. A little practice enables a person to write a given sum of money at once both decimally and in the ordinary coinage with equal facility without any process of reduction, and this facility may frequently be used to turn to decimals quantities expressed in the usual weights and measures.

Where, as in France, such tables are throughout on the decimal system, the figures give the pupil no trouble to learn. He knows them as soon as he has learnt the common multiplication table

up to 10 times 10, and there is nothing whatever of a numerical nature to learn in decimal weights and measures except mere names. Our English tables of weights and measures are an anachronism. Compared with the decimal tables, the English weights and measures are as clumsy, unphilosophical, and unscientific as is the Roman system of notation compared with the Arabic. They necessitate an enormous amount of otherwise absolutely unnecessary labour, and multiply the difficulties of 'mental' and written arithmetic a hundredfold. We may, however, minimise the inconveniences of our awkward and complex system by freely using decimal arithmetic and such approximations as are necessarily accepted in actual transactions.

Advantages of a decimal system

We may illustrate these principles (*c*) and (*d*) by reference to the rules for extracting roots. If we use Horner's method, we have the same plan for the extraction of square root, the cube root, and any root; and the method appears simple and is easily remembered. It will be worth our while here to lay out an example in the new and the old styles that we may see in what the difference lies.

Extraction of roots

To find the square root of a given number, first prepare for two vertical columns of figures. Call the right-hand column that of 'one operation,' and mark it I. Call the left-hand column that of 'two operations,' and mark it II.

Place the given number under I and a 0 under II. For convenience of explanation place a 1 in a column by itself in front of the 0.

The operations consist in multiplying each column by the last figure in the quotient, and adding to the next column until the last column, I, is reached, and then in that column subtracting instead of adding.

Let us find the square root of 128,164 by this plan.

Divide the number into two figures beginning at the decimal point.

Find by observation the nearest integer to the square root of the left-hand period. In our example this period is 12 and the nearest square root of 12 is 3.

Multiply 1 by this 3 and add to column II; multiply the result by 3 and subtract from I. The *one operation* under I is finished, but another has to be performed under II. Multiply 1 by 3 and add to II and the first step is completed. Add a 0 to II and 00 or

the second period when there is one to I. Use II as a trial divisor or I for the next figure and repeat.

The whole sum then appears as follows :

II.

```
1   0
    3
    ---
    3
    3
    ===
    6 0
      5
    ---
    6 5
      5
    ===
    7 0 0
        8
    -----
    7 0 8
    =====
```

I.

```
1 2' 8 1' 6 4 | 358
  9
  -----
  3 8 1
  3 2 5
  -------
    5 6 6 4
    5 6 6 4
    -------
```

The following is the form in which this sum would appear according to the old or ordinary method. All the figures of this appear in the above and others besides, but the simplicity and generality which are secured by thus laying out the work are well worth the few additional figures.

```
        1 2' 8 1' 6 4 | 358
          9
      ---------
65 |      3 8 1
          3 2 5
      ---------
708 |      5 6 6 4
          5 6 6 4
```

Let it be required to find the cube root of 45882712.

The rule differs from that for the square root only in the arrangement of the figures in groups of *three* and in the addition of a column of *three operations*. We have therefore only to apply the preceding explanation to the additional column as follows :

	III.	II.	I.
1	0	0	45'882'712 | 358
	3	9	27
	3	9	18882
	3	18	15875
	6	2700	3007712
	3	475	3007712
	90	3175	
	5	500	
	95	367500	
	5	8464	
	100	375964	
	5		
	1050		
	8		
	1058		

On the old plan the work would appear in the form that follows, all the figures of which are contained in the above but which hides the connexion with the preceding rule.

```
                                  45'882'712 | 358
                                  27
                                  ----------
3 × 30 × 30 = 2700 |              18 882
3 × 30 ×  5 =  450 |
5 ×  5          25 |
                 3175             15875
                                  ----------
                                  3007712
3 × 350 × 350 = 367500
3 × 350 ×   8     8400
8 ×   8             64
                 ------
                 375964 | 3007712
```

The following suggestions as regards details of method need no elaborate explanation.

Addition.—One test of accuracy in the addition of a column of figures is to cast out the nines; that is to say, to add up carrying forward at each step only the excess over nine, doing the same with the figures of the total to be tested and compared. Speed may be secured by practising in the same manner the casting out of tens. This is a kind of drill in fixing the attention on the making up of tens; as a preparation for addition of columns of pence, the casting out of twelves is a useful exercise.

Detailed suggestions bearing on particular rules

Subtraction.—There are two methods of subtraction which are equally logical—that of decomposition of the larger number and that of equal additions to both.

Suppose we have to take 275 from 432.

$$\begin{array}{rl} 432 = & 300 + 12 \text{ tens} + 12 \\ \underline{275} = & 200 + 7 \text{ tens} + 5 \\ 157 = & 100 + 5 \text{ tens} + 7 \end{array}$$

Here we say '5 from 12,' thus taking one from the three tens to make twelve units; then '7 from 12,' thus taking one from the 4 hundreds to make 12 tens, and so on.

The other plan is to add equal amounts to minuend and subtrahend, thus using two other numbers that have the same difference.

$$\begin{array}{ll} 432 & 400 + 13 \text{ tens} + 12 \\ \underline{275} & 300 + 8 \text{ tens} + 5 \\ 157 & 100 + 5 \text{ tens} + 7 \end{array}$$

Now which is the better plan? The writer has tried the experiment several times of teaching the rule to two sets of beginners—to one set entirely by the first plan, and to the other entirely by the second. No difference whatever was perceptible either in the facility with which the methods were acquired or in the speed of working, but the members of each set ever afterwards preferred to work by the method first learnt. The principle of the first method, however, is the easier to make clear to young beginners.

Weights and Measures.—A warning is probably needed against making too much of these rules; it is easy to make them a greater impediment to progress than is necessary. When a sufficient practice in one scale of weights and measures to cause the methods of reduction and the four rules to be understood is secured, we should move on.

The Unitary Method.—This should properly be introduced as an application of multiplication and division coupled with reduction. It may therefore precede the manipulation of fractions. It will be advisable, however, to introduce at a later stage—that is to say, after fractions have been dealt with—a further consideration of proportion as involving the comparison of similar things of different sizes; but when the similarity is established and the two things built up, the actual working out of the numerical value of the parts should be done by the unitary method without the cabalistic signs and complicated mechanical rules which were formerly in fashion.

Fractions.—Great care is needed in the definitions and statements of principles used in Fractional Arithmetic and as a mental discipline. This part of arithmetic is most valuable.

Percentages.—In applying the technical portions of arithmetic to a particular business, the customs of trade within the range of applications must be taken into account. Those customs of trade, which are accepted alike by buyers and sellers, by producers, distributors, and consumers, must control the applications of arithmetic.

This important lesson may be illustrated by the uses of the term 'per cent.' The 'per cent.' is an abstract ratio. That it may have a concrete application it must be attached to a concrete quantity; it must be so much per cent. of 'something.' The something may be money, it may be tea, it may be anything. When the 'per cent. of something' is the profit in a commercial transaction, the 'something' is usually one of two things corresponding to one of the two ways in which we may look at such a transaction. Suppose, for instance, that by spending 200*l.* a return of 250*l.* is secured. If we are thinking of the investment and the gain which results from the investment, then we say the gain is 25 per cent. on the sum invested. If we are thinking of the gross return only, then the 50*l.* appears to us as 20 per cent. of the amount in hand. Twenty-five per cent. of the sum invested and twenty per cent. of the gross return are in this case identical. It is evident, therefore, that when a problem depends on a 'rate per cent.' or a 'gain per cent.,' then, in order to pass from the abstract to the concrete, we must know on what the proportion is to be taken. It is ambiguous to ask 'What is the gain per cent.?' without saying on what amount—outlay or income, cost price or gross return—the percentage is to be reckoned. Sometimes men of business are concerned with the first aspect only, namely, that

in which the calculation is based on the original outlay, as in reckoning interest and the distribution of a dividend; sometimes, however, they are concerned with the second aspect only, as when they state what portion of a sum in hand is profit. Many examination questions are faulty because this point is not attended to, hence this extended comment.

Problems in Algebra should be interwoven with every exercise

Algebra.—One of the most common mistakes in the teaching of Algebra is the collection of problems involving equations in one or two places as if they constituted a distinct rule. The beginning of Algebra should grow out of Arithmetic, and should at first deal with simple arithmetical problems which may be solved clumsily without the use of Algebraical signs or symbols, but can be much more neatly stated in Algebraical form. Then problems should be interwoven with all other rules. A deep insight into the particular features of each question should be encouraged, and the mechanical application of mere rules without attempt to modify them to suit the particular case in hand should be discouraged.

The position of Euclid

Geometry.—If we now cross over to the other or geometrical group of subjects we have at the outset one great and interesting question to consider which involves the rational and irrational, the tolerable and intolerable position of Euclid's elements. The question of the methods of teaching geometry has become complicated by the traditional influence of one or two particular editions of this celebrated text-book. Hence we are subjected to two impulses, and it is necessary to consider to what extent they move us in the same or in opposite directions.

The value of tradition in education

As a first step towards the answer to this question we may remark that the science of education, although not yet an exact science, has settled foundations. The instruments by which intelligence has been developed and men have been made in the past must not be lost. We may fancy at any moment that we can invent more effective machinery, but it has to be proved, and centuries of time are necessary to test it. Moreover the work to be done is so vast that there is enough for all the machinery we can discover or devise. There is wisdom in the counsel 'hold fast the traditions of education,' provided this does not imply stagnation and is not used to impede progress.

Secondly, the science of education is an experimental and progressive science and should have no dogmas. There is something in it to be considered before and beyond the honour due

to a great name or a great book, namely the effect of the study on the pupil. Our methods have primarily to be regulated by the needs of the learner. Feeble minds have to be strengthened, weak reasoners have to be matured. Hence we must not purposely and wilfully make the study more difficult or more intricate or less attractive than it need be. It must not be so framed as to lead to bewilderment; it must encourage and stimulate.

The needs of learners may outweigh tradition

Placing these two considerations together, we find the sole questions for us are: (1) for what ages and to what extent is Euclid a suitable text-book? and (2) as far as it is suitable, how should it be treated?

It must be remembered that this text-book was never designed for beginners. It presupposed a knowledge of geometry and was a system of reasoning based on a limited number of assumptions and a still more limited number of restrictions for the discipline of mature students. There has grown up a notion that the narrowing of these arbitrary limitations rendered the reasoning more logical, but this notion does not bear examination. The course may be more ingenious than one with fewer restrictions, but is not necessarily more logical.

The history of the famous Elements was sketched as follows by the late Professor Clifford:[1] 'This book has been for nearly twenty-two centuries the encouragement and guide of that scientific thought which is one thing with progress of man from a worse to a better state. The encouragement; for it contained a body of knowledge that was really known and could be relied on, and that moreover was growing in extent and application. For even at the time this book was written—shortly after the foundation of the Alexandrian Museum—mathematics was no longer the merely ideal science of the Platonic school, but had started on her career of conquest over the whole world of phenomena. The guide; for the aim of every scientific student of every subject was to bring his knowledge of that subject into a form as perfect as that which geometry had attained. In itself at once the inspiration and the aspiration of scientific thought, this book of Euclid's has had a history as chequered as that of human progress itself. It embodied and systematised the truest results of the search after truth that was made by Greek, Egyptian, and Hindoo. It presided for nearly eight centuries over that promise

History of Euclid

[1] See *Contemporary Review* for October 1874.

of light and right that was made by the civilised Aryan races on the Mediterranean shores; that promise, whose abeyance for nearly as long an interval is so full of warning and of sadness for ourselves. It went into exile alone with the intellectual activity and goodness of Europe. It was taught, and commented upon, and illustrated, and supplemented, by Arab and Nestorian, in the Universities of Bagdad and Cordova. From these it was brought back into barbaric Europe by terrified students, who dared tell hardly any other thing of what they had learned among the Saracens. Translated from Arabic into Latin, it passed into the schools of Europe, spun out with additional cases for every possible variation of the figure, and bristling with words which had sounded to Greek ears like the babbling of birds in a hedge. At length the Greek text appeared and was translated; and, like other Greek authors, Euclid became an authority.'

Yet the moment the Professor enters on a free examination of the Postulates of the Science, he has to break loose from the time-honoured scheme, and shows that it 'will not do to take for our present consideration the postulates of geometry as Euclid has laid them down. While they were all certainly true, there might be substituted for them some other group of equivalent propositions; and the choice of the particular set of statements used as the groundwork of the science was to a certain extent arbitrary, being only guided by convenience of exposition. And for the purpose of criticising the evidence for them, it is essential that the natural order should be taken; for any *other* order would bring hopeless confusion into the discussion.'

Objections to Euclid as a text-book for beginners

It is essential for our purpose, which is to exhibit the natural principles of education, that we should follow the Professor's example and decline to be absolutely bound by tradition. Now it has been alleged against Euclid's Elements as a text-book for beginners—

First, that it is not progressive as regards difficulty.

Secondly, it is possible to render the subject both more interesting and more useful, without in the slightest degree weakening its accuracy or its vigour.

Thirdly, in geometry, as in any living and growing science, readjustment of facts, laws, and methods is an inevitable consequence of progress. It will never do in such a science to select a method solely on account of its antiquity. It would be foolish to expect that the most orderly arrangement made three centuries B.C. will suit the conditions of the science at the present time.

Fourthly, the stereotyped rigidity of the text not only perpetuates Euclid's defects, but also hampers real teaching of geometry, which in this as in other cases strives to excite thought and to establish true perceptions by presenting every possible aspect of the same thing.

Until recently, teaching of this subject was avoided, and in place of it the pupil was told, in effect, to get up the sacred text of Simson's edition.

There has, however, been a general emancipation from this slavish adherence to a particular text. It is almost everywhere admitted now that to no knowledge so much as to mathematical knowledge can we apply Montaigne's proverb, 'Savoir par cœur n'est pas savoir.' It is the continued attention to consecutive and mutually dependent statements, not the effort of memory, that gives geometry the power of curing wandering wits. Except in the definitions, the exact phraseology is not a matter of moment. This is beginning to be understood, although many teachers do not yet avail themselves of all the freedom that is now allowed them. Granted the freedom of teaching, we can put up with much imperfection in the text-book. Good teaching of a clumsy system not absolutely inaccurate is better than bad teaching of an orderly system.

Improvement in teaching already perceptible

All the English Universities have now agreed to accept proofs other than Euclid's, but both Oxford and Cambridge still require that his sequence of propositions shall be observed. It is felt by examiners that to give up this requirement would be to produce confusion and paralyse examiners; and there is little prospect of its being removed. It would be well if some paramount authority would re-group the propositions, bringing together those that are logically related and exhibiting degrees of generality; but it is best at this stage of progress to accept the restriction.

With this understanding we may now consider the details of a course of teaching.

The work of the Kindergarten is a well-arranged and definite beginning.

Next to this should come the Pestalozzian system, or what we may call the Geometry of Form. This course, following on the Kindergarten work, has long been practised in Holland, Switzerland, and Germany, and is without doubt often adopted unconsciously by unfettered teachers of elementary classes in this country.

Final scheme of subjects

Its chief characteristic is progress step by step, from the

simplest notions to the more advanced geometrical truths. It involves also simple geometrical constructions and problems in practical geometry.

Then should follow a course connecting the former with 'Euclid's Elements,' and surveying its scope and its divisions.

In selecting the proof where alternate proofs are offered, there should be a definite and consistent method of choice applied throughout. It will very much simplify the earlier steps if the following suggestions can be adopted :

First, a freer use of the method of superposition should be allowed. Euclid seems to restrict the use, but suffers in consequence. He seems to reject folding or reversing, and yet in E. I. 5 he applies E. I. 4 in a form in which it was not proved ; for one figure would have to be turned over before it could be applied to the other.

Superposition the fundamental test of equality

The method of superposition is the natural test of equality of lines and areas. Magnitudes that coincide are equal. Superposition is the fundamental and ultimate test of equality. Hence to the untutored mind it suggests itself first, and it appeals with greater directness and force. Unless we purposely try to hedge the subject with difficulty, we shall freely use this method of proving equality whenever it comes simply and directly, as in E. I. 26, first part, E. III. 26 and 27, &c.

Secondly, some of the earlier proofs would be simplified by the easy assumption that every angle has a bisector, and every finite straight line a middle point.

Thirdly, as the Universities insist on Euclid's sequence, they should by examination questions encourage or incline the student to group propositions for logical purposes, and to make logical deductions from given groups ; for instance, E. I. 4 and E. I. 26 ; E. I. 47 and E. II. 12 and 13.

Fourthly, deductions and exercises should be introduced into all pass examination papers at every stage ; for these furnish the only test of the reality of the knowledge professed.

Beyond the work associated with Euclid, there is little requiring comment, except that we must plead for a more orderly treatment of Geometrical Conics than is presented by some of our recent text-books, and for greater attention to descriptive and projective Geometry, which receive very much more attention on the Continent than in England.

Higher Geometry

We have yet one other suggestion to make having reference to

the higher teaching of mathematical subjects. It is well occasionally, perhaps frequently, to lift the student forward and place him for a moment on an eminence, from which he may see what is before as well as what is behind. This will stimulate his efforts, encourage his hopes, and perhaps chasten his desires. He will probably be led to redouble his exertions by a sight of the fields yet to be conquered, but he will also be led to moderate his expectations to that which is attainable, by a recognition of the limitations which attach themselves necessarily to the powers of the science.

R. WORMELL.

ON THE TEACHING OF ENGLISH GRAMMAR

WHAT is to be kept in view as the object, or objects, of teaching English Grammar? The question is an important one, for on the answer to it the method to be advocated must largely depend. If the object is to satisfy examiners who will require rapid answers to such questions as, 'What are the feminines of *horse* and *bull*, and the masculines of *duck* and *goose?*' 'Write down six irregular plurals,' 'What are the second person singular subjunctives of *am*, *do*, *was*?' the method to be employed will not be the one advocated in these pages. The objects contemplated by the writer are (1) to strengthen the pupil's mind and stimulate his interest in knowledge; (2) to teach him the weak points of the English language, so that he may learn how to avoid the danger of ambiguity; (3) to prepare him for the study of other languages.

The object in view

For the sake of brevity and clearness, the following remarks will be thrown into the shape of lessons given to pupils. This will occasionally necessitate an incompleteness of statement, and an absence of qualifications, that would be unjustifiable in addressing a full-grown audience. But the experienced teacher will, it is hoped, find some compensation for these defects in the practical form of the suggestions.

We are in the class-room, then, and on the point of introducing our young pupils to English Grammar. They are supposed to come from homes where English is correctly spoken,[1] and where a boy's education is not considered complete without some knowledge

[1] Common errors, *e.g.* 'drank' for 'drunk,' 'lay' for 'lie,' &c., should be noted, a list of them placed in the hands of every master, and short test sentences on them set throughout the school, once at least in the term. In a

of Latin. Probably they will study that language for a period of seven years, say, till the age of sixteen or seventeen. Yet, at the end of that time, though they may be able to answer questions on the irregularities of Latin Accidence so as to gain more than half marks, the majority (if they have been trained on the old public school system) will be unable to translate an easy Latin passage at sight with accuracy. Nor will they have derived from their study anything that is worthy to be called a knowledge of Latin literature, or any interest in language for its own sake. The more need to make the best use of our opportunity before the darkness of the study of accidence has set in, and while our pupils are still fresh and capable of being interested in anything that Nature puts before them, or that teachers, as her interpreters, put before them in a natural way.[1]

class of forty boys, averaging 14½ years of age, about ten have been known to fail—even though they knew such a sentence would be set—in filling up 'Now that we have —— her Majesty's health.'

[1] Latin and Greek are commenced so early by boys going to public schools that some illustrations from these languages have been introduced, even in the earlier lessons, though they have been constructed mainly with a view to interest the young. In using this scheme for young children, the teacher should omit illustrations that are over their heads, dwell on simple points of interest, and amplify exercises. For elder pupils, he should pass rapidly over the first part, and amplify and illustrate the second. For quite young children, only three or four of these lessons are suitable.

The scheme will wholly fail with young pupils (1) unless they are prepared for each definition by sentences (constructed by themselves) leading them up to feel the need of it; (2) unless they are provided with abundant exercises and revisions.

The spirit in which the scheme should be worked out is expressed in the author's *How to Tell the Parts of Speech*, *How to Parse*, and *English Lessons for English People*. To these occasional reference is made. But the first of these works is less adapted than the present scheme for the needs of those who are likely to study Latin and Greek.

Few things have so much impeded the progress of education during the last generation as the habit of writing at great length about general principles without giving instances. The general principles on which English Grammar ought to be taught might be expressed in six sentences. And people who agreed with them, or disagreed, might wrangle about them for six centuries, with no result but waste of time. But a scheme of teaching may teach teachers doubly, showing them what to avoid as well as what to follow. Every innovating teacher is sure to make mistakes from which non-innovators may learn. 'The proceeding upon somewhat conceived in writing doth for the most part facilitate dispatch. For, though it should be wholly rejected, yet that negative is more pregnant of direction than an indefinite.'—Bacon's *Essays*, xxv. 60–63.

HOW WE BEGAN IT; OR, BEFORE BABEL

§ 1. *Parts of Speech*

Lesson 1.—Let us suppose a time when we had no language. If the mother, with the baby at home, wanted food, water, or fire, she had to point to the empty basket (supposing they had baskets in those days) or to the hearth, or to her mouth, and then to the door (supposing they had doors) to make the father go and fetch it. There were no *names for things.* One of the earliest names known to our remote forefathers is a name known to you—'ma,' or 'ma-ma.' In Latin 'mam-ma' meant the mother's breast, and a Greek playwriter[1] tells us that an Athenian baby, when it wanted its milk, 'asked for *mamma.*' The Latin, Greek, and Indian mothers were called 'ma-ter,' 'ma-teer,' and 'ma-tri'; and our 'mo-ther' is, in German, 'mu-tter,' which is not very unlike 'ma-ter.' People learned in languages tell us that 'mea-t' and 'ma-st' (*i.e.* the food of swine) are derived from 'ma.' Whether the mother picked up the name from the baby we do not know. But it was a great step forward when the first name of a thing was invented and used to build up other names.

Nouns

Now tell me some 'names of things' that seem to you most necessary: at home; when hunting; when looking after sheep or cattle; when ploughing, sowing, or reaping; when fighting in single conflict; when fighting for your tribe against another tribe.[2]

Lesson 2.—Hitherto we have invented nothing but 'names of things.' But now suppose we are out hunting. A lion comes, and the scout in front shouts 'Lion!' That is useful as far as it goes. But presently the chief wants to tell us what to do, *e.g.* 'hide,' 'crouch,' 'run,' 'creep,' 'shoot.' Or the scout wants to tell us what the lion is doing, and whether he is 'advancing'[3] or 'retiring.' But we have none of these words. Yet they are most important—so important that they may be called '*the words*' in a sentence, because they tell us *what is done, or what we are to do.*

Verbs

What name shall we give to these very important words? We might call them 'very important words' or 'the most important

[1] Aristophanes.

[2] For the young, constructive exercises of this sort must be set as a part of each lesson. They will not be indicated, as a rule, hereafter.

[3] These long words must be used to avoid adverbs.

words.' But, for the present, we will call them, for shortness, '*The*-words.' Now tell me some '*The*-words' adapted for: home-use; use in hunting deer; in fighting for your tribe; managing a boat: building a house; gardening; gathering firewood.

Adverbs

Lesson 3.—Suppose we are building a house. We have a number of 'names of things': 'wood,' 'clay,' 'stone,' 'beam,' 'branch,' 'thatch'; and also of '*The*-words': 'cut,' 'carry,' 'bring,' 'put,' 'lift,' 'lay,' 'raise,' 'lower.' But if the architect is telling men (*a*) *how* to arrange this, and (*b*) *where* to put that, he has at present no words that help him to say 'how' and 'where.' Again, if a workman asks him whether he is to 'lower' a ladder, he has no words like 'soon' or 'immediately,' or other words that say (*c*) *when* a thing is to be done. Some of the '*where*-words,' such as 'here,' 'there,' 'up,' 'down,' he may express by gestures, but the '*how*-words' are not so easy to express, such as 'slowly,' 'gently,' 'alternately,' 'simultaneously,' 'carefully,' 'repeatedly.' Yet for want of these, or some other words to express the same thing, the workmen may go wrong. So may a man who asks us the way. It is useless for us to say 'go' when he wants to know whether he is to go *forward* or *backward*. 'Go' is quite useless here without some word *added to* it.

Give me some words of this kind 'added to' the following '*the*-words': (1) come, (2) place,[1] (3) shine, (4) call, (5) taste, (6) smell, (7) hear, (8) disappear. Arrange them in groups according as they answer the questions How? When? or Where?

Revising and Naming

Lesson 4.—Let us now revise our knowledge. We are learning how to speak and are acquiring stores of speech; and our speech, so far, consists of three distinct parts—1st, '*names* of things'; 2nd, '*the important words* in a sentence,' which we have called '*The*-words'; 3rd, *words added to the* '*The-words*' in order to answer the questions How? When? or Where?[2] We possess, therefore, three 'parts of speech,' and have given them separate names. But the name of the third 'part

[1] For the young, show that 'place' may be (1) a 'name of a thing' or (2) a '*The*-word.' Let the pupils make sentences in which 'place' is (1) and others in which it is (2). Let them do the same with 'taste' and 'smell.' Prepare them to distinguish the two Parts of Speech according to 'what they do' in the sentence.

[2] At this stage, the pupil should be called on to give more instances of these words, and should be encouraged and helped to enlarge his vocabulary, especially in the province of the how-words, *e.g.* 'he spoke *clearly, intelligibly, briefly, pleasantly, awkwardly, tediously,*' &c.

of speech' is very long and inconvenient. As we shall have to repeat these names over and over again, we must try to shorten them.

(i.) Now the Latin word for name is 'nomen.'[1] In French this is now 'nom.' But it used to be, in old French, 'non,' and hence it has passed into English in the form 'noun.'[2] We will therefore use the word 'noun' for 'parts of speech' that are 'the names of things.' When we say 'things' we include not only lifeless things, but living things, and, among these, persons, and those things that are treated as persons and spelt with a capital letter—*e.g.* 'Jack,' 'Neptune,' 'England,' 'Thames,' 'London.' Thus 'river' is a 'noun,' and 'Thames' is a 'noun.' Some people say that 'Thames,' being more of a name than 'river,' is more *properly* called a noun than 'river' is; so they call boy, sea, country, river, city, 'nouns,' but Jack, Neptune, England, Thames, London, '*proper* nouns.' We shall not use this distinction. They are all 'names' or 'nouns.' In ordinary conversation we say 'name,' as, 'Thames is the name of a river'; but in talking about the 'Parts of Speech,' the name of anything is called a Noun, *e.g.* 'the word Thames is a *noun*'; or, using inverted commas, we may write '"Thames" is a Noun.'[3]

(ii.) 'The [important] word [in a sentence]' may be shortened thus. The Latin for 'word' is 'verbum.'[4] Hence we have acquired the English word 'verb.' In talking about the 'Parts of Speech,'[5]

[1] Here stop to illustrate (for pupils that can understand it) by 'nominal,' 'nominate,' 'nominee.'

[2] Point out to those who know French how 'non,' *i.e.* 'name,' might have been confused with 'non,' *i.e.* 'not'; and how, in English, 'non' might have been confused with 'none'; so that spelling 'noun' in French with an *m* and in English with a *u* prevents ambiguity.

[3] Here a distinction may be drawn between 'London is the capital of England,' and '"London" is a noun'; and some exercise might be given in the use of inverted commas. The teacher will do well to avoid the use of the term 'substantive.' If it is to be mentioned at all, I should adhere to the description of it in *How to Parse*, p. xxvii, 'a useless name given to nouns denoting things said to have *substantial* existence.'

[4] Illustrate by 'verbal,' 'verbose,' &c. Henceforth it will be assumed that teachers, when introducing important terms, will illustrate them thus; so that footnotes of this kind will mostly be dispensed with.

[5] Here call attention to the fact that we have twice used the tedious expression 'in *talking about the parts of speech*,' and show the need of the briefer phrase 'in *Grammar*.' According to the capacity of the pupils, the teacher may, or may not, touch on the fact (to be dwelt on later) that the art of Grammar deals with the art of *writing* correctly, and that people who may be able to *speak* so as to make themselves readily understood do not always write so as to avoid ambiguity.

'shoot,' 'creep,' 'run,' 'shine,' and other words that tell us what anything *does*, are called Verbs.[1]

(iii.) 'The words added to the [important] words [in the sentence]' may be similarly shortened. They might be called 'added to verbs.' But 'added to' is expressed in Latin by 'ad,' as in the words '*ad*-joining,' '*ad*-jacent,' '*ad*-here.' So we call these words '*Ad*-verbs.' In Grammar, a word that answers the questions How? When? or Where? is an Adverb.[2]

Lesson 5.—We are on the bank of a river, fishing with a net or with harpoons. A watchman is on a rock to tell us where the big fish are lying, or to warn us against crocodiles in the river, or tigers that may leap on us from the jungle. When he shouts 'Salmon!' or 'Crocodile!' it is important that we should know where it is. For this purpose he may use Adverbs, 'above,' 'below,' 'near.' But these are vague. Perhaps there is at hand a sand-bank, or a specially tall palm-tree, or a cliff, or a cavern, or a fountain, or a corner where the river makes a sharp angle. Then he can be more precise. For he can say, 'tiger crouch *above* cliff,' or '*below* palm-tree,' or '*near* fountain'; 'crocodile creep *on* sand-bank' or 'swim *round* corner.' Or we may catch sight of some tiger's cubs, and then the scout may warn us that the tiger is '*with*,' or '*behind*, cub.'[3]

Prepositions

In each of these cases, we are using, instead of an Adverb by itself, a Noun with a word *placed before* it, and we might call these words 'before-placed' or 'fore-placed.' But the Latin for 'before' is 'pre-,' and the Latin for 'placed' is 'posit-': so we call these words Pre-positions.[4] A Preposition is a word placed before a Noun so as to make up the meaning of an Adverb.

The Prepositions above mentioned all help to answer the question Where? But others help to answer the question From where? (*i.e.* Whence?) or To where? (*i.e.* Whither?). Thus the tiger may leap 'from' the jungle or 'towards' us.

[1] At this point, or a little later, younger pupils must diverge. They must be shown that verbs are 'stating words,' either complete, or incomplete, and tests must be given by which they may distinguish a verb (*How to Tell the Parts of Speech*, pp. 35–44). Then they may take up parts of the following lessons.

[2] It will be shown later on that though this is absolutely true it is less than the truth. Adverbs also answer the questions Whence? Whither? In what circumstances? and How far is this true?

[3] Point out that some of these words are no longer used as Adverbs, *e.g.* 'with' except in 'withstand'; 'on,' and 'by,' except in 'go *on*,' 'stand *by*,' and a few such phrases. 'At' is never used as an Adverb.

[4] Such illustrations as 'imposition,' 'prepostor,' might be specially useful in stamping the new word on the memory of school-boys.

But what are we to do if we want to use Prepositions to make up Adverbs that answer the questions When? or How? We must take the above-mentioned Prepositions that answer the question Where? and must use them to answer When? or How? Thus, 'at,' 'by,' 'with,' mean neighbourhood, or being near. So we can say '*at*, *by*, sunset, or sunrise,' or '*against* harvest-time,' *i.e.* when harvest-time comes. Similarly, if the Chief asks us how we caught the salmon, wanting to know whether we used our hands or the net or the harpoon, we must take 'with' or 'by' (both of which mean 'near'), and must say '*by* hand,' '*with* net, *with* harpoon.'

Adjectives

Lesson 6.—We are in the pastures with our sheep. There are more than a hundred in our flock, but we can easily distinguish each from the rest. A stranger, however, cannot. If we promise him a sheep in return for a pig, he will want to know *what kind of* sheep, or, perhaps, *which* sheep. What shall we reply?

(1) We may point to a sheep and say, '*This* sheep, *that* sheep.' (2) But he may mistake, and then he may quarrel with us for not giving him the one he expected. So, if there is one that he has specially noted as 'fat,' 'lean,' &c., we may say, '*Fat* or *lean*, *big* or *little*, *white* or *black*, *short-legged* or *long-legged*, *horned* or *unhorned*, sheep.' (3) Possibly the stranger or the stranger's brother has recently sold us a sheep, which he recognises; in that case we can say '*your* sheep' or '*his* sheep.' Or we may drive the sheep slowly out of the pen, and say (4) '*third*, *fourth*, *fifth*,' &c.

All these words answer the question 'Which?' But perhaps he wants corn, and has brought several pigs into our barn where the corn is stored in sacks. Then, if we promise him sacks, he will not say '*Which?*'—for the sacks of corn are *all of the same kind or quality*. Hence his question will be now not about *quality*, but about *quantity*: 'How *much* (corn)?' or 'How *many* (sacks)?' We shall reply, according to circumstances, '*Little* (corn), *much* (corn); *ten* (sacks), *two* (sacks),' &c.

What name shall we give to these Parts of Speech which are *added to Nouns in order to answer the question Which? or How much?* We have already called some words Ad-verbs, because they are placed 'to, or near, Verbs.' So we might call these words 'Ad-nouns.' Again, we have called other words Pre-positions, because they are 'fore-placed,' being 'placed-before (Nouns).' So we might call these words 'Ad-positions,' or 'Appositions.' But we have borrowed from Latin another word meaning 'placed to,'

derived from '-ject,' which we use in the words 'pro-ject,' 're-ject,' 'e-ject.' Hence we call these words 'Ad-jectives.' In Grammar an Adjective is a word added to a Noun to answer the questions, What sort of? Which? How many? or, How much?

§ 2. *Inflections*

Lesson 7.—We have now acquired five Parts of Speech, namely, Nouns, Verbs, Adverbs, Prepositions, and Adjectives. But we have *not yet the power of making any definite statement.* Suppose the Chief says, 'Deerfoot shoot Long-arm' (these being the names of two Tribesmen). This may be said (1) *to* Deerfoot, *bidding* him shoot Long-arm; or it may mean that (2) Deerfoot is *at this moment* shooting Long-arm, or that (3) he *will* shoot, or that (4) he *has* shot, Long-arm. All this ambiguity arises from the fact that, as yet, our verbs simply mention what is done, or to be done, but do not tell us the *time* of doing.

How to express Time and Person in Verbs

Again, in English poetry, we sometimes alter the customary order of words, so that 'the slave the master killed' might mean either 'the slave killed the master,' or 'the master killed the slave'; and in many languages such an order of the words is very common in prose, so that we could not tell who killed whom, unless there were some device for making things clear. Hence, beside the *time* of the doing, we want some means for making it clear *who* (or *what*) does the action.

(i.) First, as to the *time* of the doing. We may be supposed to use 'do' already for *present* doing, and 'did' for *past* doing. Then, if the action is *present*, we will put 'do' after 'shoot': and 'shoot-do' shall mean that some one *shoots*, or *is now shooting*. If the action is *past*, we will put 'did' after 'shoot,' and 'shoot-did' shall mean that some one *shot*. If the action is *future*, we can express it by 'will,' which signifies desire, and has to do with what is to come. So 'shoot-will' shall mean that some one *will shoot*.

(ii.) Next, how shall we express the *person* who does the action? This may be done in two ways. We may either alter the Nouns or alter the Verbs.

If we alter the Nouns, we may put some sign, such as '-e,' after the Noun that signifies the doer, and some sign, such as '-im,' after the Noun signifying the person to whom the action is done. Thus 'Deerfoot-e shoot-do Long-arm-im' will mean that Deerfoot is the person shooting, and Long-arm the person now being shot; and

with 'shoot-did' or 'shoot-will,' the sentence would mean that Deerfoot had already shot Long-arm, or was going to shoot him. But what signs will be best for us to use at the end of our Verbs? And why have we chosen '-e' and '-im' to put at the end of our Nouns? These questions cannot be answered till the next Lesson.

Lesson 8.—The Chief has often to tell the Tribe what he judges best to be done, and the Tribesmen must ask the Chief what he commands. But the names of Chiefs in old days (as among the North American Indians, *e.g.* 'Buffalo with the broad forehead') are often very long, such as 'Leader of men,' 'Protector of the host,' 'Man of many devices.' If, whenever the Chief speaks of *himself*, he has to repeat 'Buffalo with the broad forehead,' he will never get through his work. The same difficulty will occur whenever he is speaking to a *second* person, or to a second person about some *third* person, who is absent.

Pronouns

(i.) Consequently, we will use some short words to stand for these long nouns. 'I' shall stand for the person *speaking*, and this, as it comes first in order, may be called the *First Person*; 'thou' for the person *spoken to*, the *Second Person*; 'he' for the person *spoken about*, the *Third Person*.

But there is still this difficulty, that we cannot distinguish between the person shooting and the person shot: for 'I shot he,' or 'He shot I,' or 'I he shot,' may, *at present*, mean that the Third Person shot the First. To avoid this ambiguity, we will use 'him' to denote the Third Person shot, and 'he' to denote the Third Person shooting. Then, whatever the order of the words may be—'Him shot I,' 'Him I shot,' 'I him shot,' 'I shot him'—the meaning is unmistakable: it is the First Person that shot; it is the Third Person that was shot. The same thing can be done by devising two distinct forms for the First and Second Persons; and so we obtain the following list:

WORDS USED INSTEAD OF NOUNS

	PERSON DOING.	PERSON TO WHOM IT IS DONE.
First Person (speaking) . .	I	Me
Second Person (spoken to) . .	Thou	Thee
Third Person (spoken about) .	He	Him

(ii.) But what if the Council of the Tribe (twelve elders with very long names) issues a decree to the Tribesmen? The time taken up in repeating the dozen names would be so long that we must have another 'word instead of a Noun' to represent, not 'person,' but

'persons' speaking. And if we are to do this for persons speaking, we may as well do it for persons spoken to or spoken about. So we get:

	PERSONS DOING	PERSONS DONE TO.
First Persons	We	Us
Second Persons	Ye	You
Third Persons	They	Them

These words used 'instead of Nouns' must be called by some short name. 'Instead of,' in Latin, is 'pro.'[1] So we call them *Pronouns*.

The word 'persons' implies *more than a single person*, or *plurality*. Hence the former list is said to represent the First, Second &c. Person, Single (or, in Grammar, Singular): the latter, the First, Second &c. Person, Plural.

(iii.) After the Chief has said, 'Go to *him*,' the Tribesman may be taken aback if he finds, on going to the Third Person thus mentioned, that it is not a man, but a woman. To avoid such surprises we shall find it well to have a feminine Pronoun—'she,' to signify the Third Person *doing*, and 'her,' to signify the Third Person *done to*. Also, unless we have a short word of this kind to denote a thing, there may be confusion when the Chief, after speaking of a fisherman and a net, says, 'Go, fetch *him*.' For he may mean the net. Hence, we will use 'it' for any Noun that does not denote a person.[2] It will not be so easy to make mistakes about a number of men, women, or things, so we need not, for the present,[3] invent separate Plural forms, but can be content with 'they,' 'them.' But, as we have two forms for the woman-Pronoun ('she'

[1] Illustrate by 'pro' used in business signatures, and perhaps by the Latin 'proconsul' as compared with the English 'vice-consul.'

[2] Man-Pronouns and woman-Pronouns are sometimes called respectively 'masculine' and 'feminine,' and are often said to be of the masculine or feminine 'Gender,' *i.e. genus, class*, or *kind*. Thing-Pronouns are of *neither* of these *Genders*. The Latin for 'neither' is 'neuter.' Hence thing-Pronouns are said to be of the Neuter Gender. In Latin and Greek, all Pronouns except those of the First and Second Persons are capable of being used as Adjectives (like our 'these,' 'those'), and have Neuter as well as Masculine and Feminine forms. But in English we have practically no Gender in Grammar. We have merely a few words (he, she, him, her, it) to represent, in the Singular Number, the names of persons or things, according as they are masculine, feminine, or neuter, 'doing' or 'done' to.

[3] 'For the present' is intended to leave it open to the teacher to explain hereafter that, in Latin and Greek, there are feminine and neuter forms for 'they,' 'them.'

and 'her'), ought we not to have invented two also for the thing-Pronoun—say, for example, 'it-e' and 'it-im,' the former for the thing or animal doing, the latter for the thing or animal done-to? Perhaps we ought to have done so. But we omitted this, because, perhaps, we thought that we 'do' to animals and things, whereas animals and things very rarely 'do' to us. We take captive, kill, tame them. They very rarely bite or devour us. It would be convenient sometimes to have these two forms now.

Between people speaking and spoken to, there would be no doubt concerning sex; so we have no woman-forms for Pronouns of the First or Second Person.

Verb Inflections

Lesson 9.—In Lesson 7, we were considering what signs to put at the end of our Verbs in order to represent the person that does the action. The Pronouns will serve as the signs that we are seeking. After 'shoot-do,' 'shoot-did,' 'shoot-will,' place the Pronouns that represent persons doing, and our Verbs will tell the person as well as the time of the action. 'Time,' being in Latin 'tempus,' and in French 'temps' (or, in Old French, 'tens'), is called, in Grammar, 'Tense.' Here is the 'Present Tense' of shoot.

Shoot-do-I	Shoot-do-we
Shoot-do-thou	Shoot-do-ye
Shoot-do-he	Shoot-do-they

Or else, expressing ourselves by saying 'the shooting *belongs*, or *is*, *to* me, thee, him, &c., we might say:

Shoot-is-me	Shoot-is-us
Shoot-is-thee	Shoot-is-you
Shoot-is-him	Shoot-is-them

In practice, we could not easily pronounce these Verb-endings, and should probably contract them. If so, we might get (in the Second and the Third Person Singular) 'shoot-is-t,' 'shoot-is-h.' In our own language we still have the old forms 'shoot-est,' 'shoot-eth,' but no others. Nor can we say 'shoot-est,' or 'shoot-eth,' without 'thou' and 'he' before the Verb. But in Latin and Greek the Verb is regularly used without a Pronoun. That was a saving of time. Moreover, it helped to mark emphasis. In English, we have to mark emphasis by underlining a word or printing it in italics. But in the language we are constructing, 'shootish,' or 'shooteth,' would mean 'he is shooting,' and 'he shooteth' would mean '*he* is shooting.'

Lesson 10.—Suppose the Chief asks what is coming, and the Tribesman replies, 'Dog.' He may mean more than one, but has, at present, no means of expressing it. How shall we make things clear? In two ways.

The Plural of Nouns

(i.) We might represent the Singular Number by putting the adjective 'one' before 'dog' (as the French do). In Old English, 'one' was spelt 'ane'; and hence it became 'an' or 'a' according as the Noun begins with a vowel or a consonant—'*an* ox,' '*a* dog.'

(ii.) We might represent the Plural by adding 'yea,' or 'yes,' after it—'dog-yea,' 'dog-yes,' which might be contracted into 'dog-e' or 'dog-es.' Or we might add 'them,' or a part of it, namely, 'em.' The Latin and Greek languages have a great number of signs of the Plural, and, among these, '-es' and '-a.' The German has '-e,' '-en,' and '-er.' In the oldest English there were '-as,' '-an,' '-u,' '-a,' '-o.' In modern English we have only '-es (or -s),' and the '-en' in 'ox-en' and a few obsolete words such as 'shoo-n,' 'hosen,' 'een' (for eyes).

Lesson 11.—We are now able to make statements about persons and things by means of[1] ——? 'Nouns, Pronouns, and Verbs.' Also the Verb will tell us, by its three above-mentioned times or 'Tenses,' something about the *time* of the action, namely, whether it is ——? 'Past, Present, or Future.' We can say how, when, and where, things happen, by means of ——? 'Adverbs.' Yes, Adverbs and ——? 'Adverbial Phrases.' And these Adverbial Phrases are composed of ——? 'Prepositions and Nouns.' And we can distinguish one thing from others of the same class by means of ——? 'Adjectives.'

The Possessive Form

But what if there are two or more things of the same class, and all precisely alike—nets, for example? Suppose Deerfoot owns one, and the Chief wants that one. Shall he say, 'Deerfoot has a net; bring it?' This would be long. It would be shorter to say, 'Bring Deerfoot-net.' But this might be confused with 'Bring, Deerfoot, a net,' or 'Bring (to) Deerfoot a net.'

(i.) This ambiguity can be avoided by placing some short sign at the end of 'Deerfoot' so as to make *a kind of adjective denoting possession.* In English we add '-'s.' In Old English it used to be '-es,' and the mark (') denotes that the 'e' is omitted. So 'Deerfoot-es net' has become 'Deerfoot's net.'[2]

[1] The pupils should supply answers.

[2] The (') also serves to distinguish between the possessive ('boy's') and the plural ('boys'). 'His' is a possessive form of 'he.' If it were spelt 'he's,' it would be confused with 'he is.'

(ii.) Another way of expressing 'Deerfoot's net' would be to use some Preposition, *e.g.* 'the net *with* Deerfoot,' or 'the net *from* Deerfoot,'[1] meaning 'the net that is with him in his house, or comes from his house.' And this we actually do in English, choosing, however, the preposition 'of,' which was once spelt 'off' and meant 'from';[2] and we say 'the light *of* (*f*) the star,' 'the books of (f) the boys.' Once, we meant by this, 'the light [that comes] *from* the star.' But now we use 'of' where there is no meaning of 'coming *from*,' as in 'the point *of* the knife.'

The Dative

Lesson 12.[3]—In the market-place, when we are buying and selling, it will be inconveniently long to say, 'Give *to* me a sheep, and I will give *to* you three geese.' Hence, we shall invent some sign to represent what we might call the Market Form of Nouns and Pronouns. We might, for example, add 'to,' 'Deerfoot gave *me-to* a sheep,' 'I gave Deerfoot-to a goose.' This might be shortened by dropping 't,' so that '-o' would be the sign of the Market Form. This exists in several languages, and is called the 'Dative,' which means 'the giving (form).'[4]

In English we have lost our Dative.[5] But we still retain a trace of the Old English Dative in the fact that we omit the Preposition 'to,' not only before Pronouns, but also before Nouns, *e.g.* after 'give,' 'lend,' 'get,' 'do,' 'tell,' 'leave': 'Give the machine some oil,' 'Leave the cart room.'[6]

Cases

Lesson 13.—Let us review our Noun-signs. We have seen above that (1) '-e,' appended to a Noun, might denote the *person doing*; (2) '-im,' the *person done to*;

[1] Strictly speaking, this ought not to come till later, for 'the' implies a Relative Pronoun, 'the net [*that is*] with, from, or of.' 'The' is akin to 'that,' and means 'that one [spoken of, or, known to all], &c.'

[2] Compare, 'the apple falls *off* the tree.' The teacher will, of course, explain why we cannot conveniently say 'the *boys'* books.'

[3] This and the following Lesson are adapted for pupils beginning Latin or German. But all who are to use the word 'case' ought to be prepared for the term.

[4] Compare 'date' and 'data.' (*a*) 'Four apples cost sixpence; (*b*) what is the cost of a hundred apples?' Here '(*a*)' represents the 'data.'

[5] Yet when we say 'Give him the child,' 'him' is the Old English Dative. Another form ('hine') might have been used of 'the child' thus 'given.' But now 'him' is used both for a person given to another and for a person to whom anything is given. In Dorsetshire, countryfolk still say 'I see *un*' for 'I saw *him*.'

[6] Sometimes we must supply the Preposition 'for,' *e.g.* 'Get the dog a collar,' 'He fetched me a blow in the face.'

(3) '-s' might denote *possession*; (4) '-to,' or '-o,' might be the sign of giving or the Dative.

We might go on to construct other Forms, such as (5) a Place-Form by adding the Preposition '-in,' or '-i'; (6) an Instrumental Form by adding '-with' or '-wi'; (7) a Taking-away-Form by adding '-from' or '-fro.' Thus 'hous-i' would mean 'in the house'; 'hand-i,' 'in the hand'; 'fist-wi,' 'with the fist.' All these Forms would be very useful for our pre-Babel language, and they would help us to be brief and clear. But, though other languages have them,[1] ours has not. The nearest approach to them in English is (8) a Coming-to Form made by adding '-ward' to a few Nouns, 'homeward,' 'westward,' 'eastward,' &c.[2]

What name shall we give to these Forms? In a fever hospital, it is common to say concerning diseases, 'This *case* is mild, acute, unusual,' &c., meaning, 'this *form* of fever.' Here 'case' means 'falling,' the way in which the circumstances of the illness vary, *fall* out, or *befall*. 'Falling' used to be the name given to any grammatical Forms (whether in Verbs, Adverbs, Adjectives, or Nouns) that varied, or '*fell* away,' from some original form.[3] We have borrowed this word, and applied it specially to Noun Forms. So we say that 'John's' is the Possessive Case of 'John.'

We do not apply the word to the Forms of Verbs. These we call Inflections, or 'bendings,' regarding the Verb 'love,' for example, as 'bent into' the forms 'lov-est,' 'lov-eth,' &c.[4]

Interrogatives

Lesson 14.—Suppose the Chief is interrupted in a Tribe meeting, and wishes to ascertain the name of the interrupter. At present he can only make a statement in an interrogative tone, adding, perhaps, an exclamation, 'Some one interrupted, ha!' But how much more convenient to put the 'ha,' or some

[1] Here the teacher may give the Latin names Locative, Ablative (but only if the boys have already begun Latin), and might go back to compare the Possessive and the Genitive.

[2] Only Adverbs appear to have originally received this termination. The above-mentioned words can be used adverbially, as, 'He went *home*, *East*, *West*,' &c. We go further in modern English, and say, 'landward,' 'shipward,' &c.

[3] See Bonitz's *Index to Aristotle*.

[4] At this point, some of the older and brighter pupils might, with advantage, have the Old English Cases of 'tongue,' 'word,' 'hand,' 'son,' 'herd,' set before them (*How to Parse*, p. 308). Even the younger ones might be interested in the Cases of the Pronouns (*Ib.* p. 309), showing that the genitive of 'we' (accus. 'us') was 'us-er,' or 'ure'; of 'ye' (or 'ge'), 'eower'; of 'I(e),' 'min'; the gen. of 'heo' (the old form of 'she') 'hire'; and that the plural 'they' was declined nom. 'hi,' gen. 'hira,' dat. 'hem,' accus. 'hi.'

interrogative sign, before a number of Pronouns, Adjectives, or Adverbs, so as to use them interrogatively! This has been done in several languages by prefixing *qu-*, or *k-*; or *wh-* (or, in German, *w*). Hence, in English, (1) 'who?' (2) 'what?' corresponding to 'that'; (3) 'when?' corresponding to 'then'; (4) 'where?' to 'there'; (5) 'whither?' to 'thither'; (6) 'whence?' to 'thence.'[1] The first in each pair of these words, since it asks or *interrogates*, is called *interrogative*; the second, since it points out or *demonstrates*, is called *demonstrative*. With the aid of the interrogatives, the Chief may say, '*What man* (or, *Who*) interrupted?'

Participles

Lesson 15.—Suppose the Chief bids the archer, 'Shoot that bird.' The archer asks, 'Which?' The Chief, wanting some Adjective, makes one out of some Verb, and says, 'That bird—*singing*,' or '—*eating* the bread,' or '—*caught* in the net.' The archer will not trouble himself to ask whether it means the 'bird *that is* singing, or, *while* singing,' or, '*because* it is eating the bread,' but will treat the Verb Form as an Adjective telling him which bird to shoot. Yet, though Adjectives, these words are also Verbs. Hence, as they *participate* in the nature of Verbs and also in that of Adjectives, we will call them 'Participles.' 'Singing' tells us what the bird is actively doing, so we may call it Active. 'Caught' tells us what the bird has passively endured, so we may call it Passive.

§ 3. *Combinations of Sentences*

Relative Pronouns

Lesson 16.—Some one has killed Deerfoot; and the Chief is searching for the murderer. Not knowing the man's name, nor any mark by which to distinguish him, he cannot use a Noun, nor a Noun and an Adjective together.

(i.) He might begin with the fact, and then give the command: 'A man killed Deerfoot. Seek that man.' Or, beginning with the command, he might then give the reason: 'Seek that man; that man killed Deerfoot.' Both in (1) and in (2) 'that' is an Adjective. But in (2) the second 'man,' not being needed to make the meaning clear, might be dropped out; (2) would then become 'Seek that man that killed Deerfoot.' Here the words

[1] The older pupils might be directed to the corresponding forms that might, did, or do exist, beginning with *h*; (1) ['ho,' *i.e.* this man]; (2) ['hat' *i.e.* this thing]; (3) ['hen' *i.e.* at this time]; (4) here; (5) hither; (6) hence. Also 'which' might be compared with the vulgar 'sich,' and with the Dorset 'thic-ce' (comp. Latin 'hic-ce'). 'How' is spelt, in *Piers Plowman's Crede*, 'whow.'

'that . . . *that* killed Deerfoot,' form a kind of Adjective added to 'man'; and the second 'that' has been changed from an Adjective to a Pronoun. What name shall be given to this Pronoun? Ordinarily the Pronouns 'this,' 'that,' &c., are called Demonstrative or Pointing Pronouns; but here 'that' is peculiarly used. It has '*joined together*,' or '*conjoined*,' *two sentences*. It might, therefore' be called the Conjunctive Pronoun. We must wait to see why it has received a different name.

(ii.) The Chief might place a question first, and the command second: 'Who killed Deerfoot? Seek that (or, the) man.'[1] This, when the command was placed first, would become 'Seek that (or, the) man *who* killed Deerfoot.' 'Who,' when used interrogatively carries our minds *forward* to some answer. But, when used as in this last sentence, it *carries us back*, or is *carried back*, to the word 'man,' which goes before it. In Latin, 'back' is expressed by 're-,' and 'carried' by 'lat.'[2] So we call 'who' no longer interrogative but 'relative.'

Then, having given this name to 'who,' we give it also to 'that,' *when used* '*relatively*.' The Noun to which 'that' or 'who' *refers*, or *carries us back*, always *goes before* the Relative Pronoun. We might, therefore, call it the Fore-goer or Pre-cedent. But since 'ante-' (as well as 'pre-') means 'before,' we call it the Antecedent.[3]

Subjects and Objects

Lesson 17.—(i.) In every statement there must be, besides the Verb, some word, or group of words, that answers to the question Who? or What? before the Verb. This word, or group of words, being the *subject* of the Statement, is called, *in Grammar*, the '*subject*' of the Verb.[4]

[1] On 'the,' see footnote (1) above, p. 101.

[2] So 're-late' is 'carry back (word)'; 'e-lat-ed' is 'carried out of (oneself).'

[3] Here the attention of the older pupils might be called to the double meaning of the relative 'who'; (1) 'seek the man *who*-(ever it is that) killed'; (2) 'seek Thomas; *who* (*i.e.* for, because, since, &c. he) killed.' Between 'who' in (1) and the relative 'that' the distinction is now indefinable. The distinction between the relative 'that' and 'who' in (2) is very important, and may be illustrated by (*a*) 'I heard it from the man *that* cleans the boots,' (*b*) 'I heard it from the policeman, *who* (*i.e.* and he) heard it from the postman.'

'That,' and 'who' in (1), introduce Adjective *Phrases* (*How to Parse*, par. 239). 'Who' in (2) introduces a new *Sentence*. Present custom, the Bible, and Shakespeare, must guide us in using 'who' and 'that.' But where 'who' is used for 'that,' as in (1), care must be taken to prevent ambiguity.

[4] The Subjects in Interrogative and Imperative sentences cannot be treated here (see *How to Parse*, pars. 4–6).

(ii.) 1. Some Verbs and Subjects make a statement that may be complete. These suggest no question, *e.g.* 'this *suffices*,' '*shines*.'

2. Others suggest What? or Who? *e.g.* 'this *is* ——,' 'this *seems* ——,' 'this *appears*——.' What? or Who? To which the answer may be 'I,' 'a vegetable.'

3. Others suggest What? or Whom? *e.g.* 'This *killed* ——' What? or Whom? 'A hare.'

In the third class of Verbs, the action may often be regarded as *passing across* into the person or thing whose name answers the question. Hence these Verbs are said to be Transitive (comp. 'transit,' 'transition'). A Transitive Verb may often be used not transitively, *i.e.* intransitively, *e.g.* 'He *paints* well.'

The word or group of words answering the question, Whom? or What? after a Transitive Verb is called its Object.[1]

(iii.) All Prepositions suggest the question Whom? or What? and the word or group of words that answers this question is called the Object of the Preposition.

(iv.) In 'Poison killed Deerfoot,' the *Grammatical* Subject is 'poison.' But the subject *uppermost in our thoughts* may be 'Deerfoot,' and we can make it the Grammatical Subject by using the Verb 'is' and the Passive Participle of 'kill': 'D. was killed by poison.' By similar variations we obtain a Passive Form corresponding to every Active Form of the Verb.

Sometimes the Grammatical Object of a Verb is quite different from the personal object, *i.e.* the object of the person doing. In 'To *avoid* the *high road*, I turned aside to a footpath,' my object is *to avoid* the high road; but the *Grammatical* Object of the Verb 'avoid' is 'high-road.' Similarly, in 'I turned aside *from* the high-road,' we call 'high-road' the Object of 'from.'

(v.) The (1) subject or (2) objec. may be a clause[2] with a Relative Pronoun.

(1) '*The man that killed Deerfoot* ran away.'

(2) 'They sought *the man that killed Deerfoot*.'

(1) '*What* (*i.e. that which*) *you said* was wrong.'

(2) 'You said *what* (*i.e. that which*) *was wrong*.'

(vi.) Suppose a sentinel on a high rock calls out, 'The enemy

[1] Verbs in classes (1) and (2) above may be called Intransitive. Want of space forbids us to touch on the Indirect Object (*How to Parse*, pars. 118–121).

[2] A phrase that includes a sentence may be called a clause. A phrase is a group of words expressing a meaning, but not a statement, &c. But a phrase may *include*, or *imply*, a statement.

is a mile off.' Five minutes afterwards, the Chief asks him to repeat what he said. If he replies, 'I said the enemy is a mile off,' he will give the Chief the impression that the enemy is *still* 'a mile off.'[1] So he says, 'I said the enemy *was* a mile off.' Here 'the enemy was a mile off' is the object of 'said.'

§ 4. *Conjunctions*

Conjunctions of Time, Place, and Manner

Lesson 18.—Suppose the Chief is instructing an archer when to shoot at the deer. He may say, 'The deer will run past you. Shoot then.' But the archer may not know whether he is to shoot *while* they *are* running, or *when* they *have* run past. It will be better to say, 'At what time the deer *are* running past, or *have* run past, shoot.' If the archer shoots too soon, the Chief might say, 'The deer ran past. You shot before that.' Then he might say, 'You shot *before that* the deer ran past,' turning 'before that' into one word. Then, for shortness, he might drop 'that,' and say simply 'You shot *before* the deer ran past.'

Words that *join together*, *i.e.* 'conjoin,' two sentences, are called Conjunctions.

(i.) Conjunctions of Time are (1) 'after,' 'before,' 'till' (or 'until'); (2) 'when,' 'while.'[2] These, together with the sentences they introduce, make up sentence-Adverbs answering the question When?[3]

(ii.) The Chief will not need as many Conjunctions of Place as of Time.—Why not? Because he can see places, and can use Prepositions to say, 'You shot *before* that bush, *beyond* that rock, *near* that tree,' &c. Of place-Conjunctions we have, in English, only 'where,' 'whither,' and 'whence'; and only the first of these is now much used.

[1] This is a defect in English. It would be better to have some form of the Verb such as 'be-en' to mean, not 'be,' but '*said to be*.' We have no such form. By the aid of 'to,' we can say 'I *asserted* the enemy *to be* a mile off. But this construction is only possible with a few words of written rather than spoken English, such as 'declare,' 'maintain' (not with 'call out,' 'cry, 'shout').

[2] (For older pupils.) 'Till' was originally a Preposition meaning 'to'; so that the Conjunctions of Time are either Prepositions having phrase objects, or else they begin with the Interrogative or Relative wh-, comp. 'ante-quam,' 'prius-quam,' and the Shakespearian 'before that,' 'after that,' French 'avant que,' 'après que.'

[3] Or 'When . . . not?' The teacher must explain this with detail. clearly.

(iii.) Conjunctions of Manner introducing an answer to the question How?—Will these be needed? Not much to express *outward* manner, or any circumstance that we can *see*. For we can express this by Adverbs or Adverbial Phrases. For example, if a boat is approaching, we can say that it is being moved 'by oars,' or 'with sails,' 'smoothly,' 'slowly,' 'with skill,' 'with swiftness,' 'at a great pace.' But suppose the Chief says, 'That boat is in danger,' and we say 'How?'. Here we want him to explain what unseen circumstance *causes* the danger—rocks, or winds, or bad rowing, or enemies, of which we know nothing. He may say 'From wind'; but, if no wind is blowing at the time, we shall be mystified. We need a sentence such as 'A wind will blow at sunset,' and this should be joined to the Chief's first sentence by some Conjunction implying *Cause*. The next Lesson must teach us how to make these and other Conjunctions.

Conjunctions of Cause and Result

Lesson 19.—(i.) Suppose, in battle, a Tribesman throws himself in front of his Chief to save him from a spear-thrust, and dies *before* him. Carrying him home on his shield, they say, 'He died *before*, *fore*, or *for*, the Chief.' Repeating this, after many battles, they will not mean merely that he died *in front of* the Chief. They will mean that he gave up his life *for the sake of* the Chief. So, in answer to the question 'For what cause did he die?' they might say, 'For the Chief.' In early English, 'for (the fact) that' was used as a Conjunction to introduce a cause. Hence, without any notion of place, men might say, 'He died, *for that* the Chief was in peril,' or 'He died, *for* the Chief was in peril.' In time, 'for that' was dropped, and the conjunctive use of 'for' was almost restricted to the *beginning* of sentences (or clauses preceded by a considerable pause). In place of 'for-that' we now use 'because,' which was originally 'by (that is, near)[1] -cause-that': 'He died *because* the Chief was in peril,' or '*because* he wished to save the Chief.' Applying this word to the instance of the 'boat' in the last lesson, we might say, 'The boat is in danger, *because* the wind will blow at sunset.'

When the Chief said, 'That boat is in danger,' some young and inexperienced Tribesman might say, 'It is calm, though.' Here 'though,'[2] like 'nevertheless,' is used as an Adverb. The Chief may quietly rebuke him by modifying the young man's words, using

[1] The effect is regarded as being 'by,' *i.e.* 'near,' the cause. The meaning is 'His death was *near* this *cause*, namely, he wished . . .'

[2] Compare the German 'doch.'

'though' as a conjunction. 'That boat is in danger *though it is*, or *be*, *calm*.' This might be called a Conjunction of Non-cause (for calmness is a 'non-cause' of danger), but as it has to do with 'causing,' we call it a Conjunction of Cause.

(ii.) Conjunctions of Effect or Result. An action without a result is incomplete. On hearing that 'Deerfoot threw himself before the Chief,' the people at home will at once cry, 'How did it end?' The answer will be: ['it ended] *thus*, or *so*, the Chief was saved.' But without waiting for the question, the messenger may say, 'Deerfoot threw himself in front, so the Chief was saved.' Here 'so' is an Adverb (meaning 'in that way') used conjunctively, describing the means by which, or way in which, the Chief was saved. But by adding 'that' (meaning 'in which way') we have a pure Conjunction, 'threw himself in front *so that* (in that way, in which way) the Chief was saved.'

Lesson 20.—(i.) As a rule, when two or more short sentences are used consecutively without Conjunctions, we infer that the first action helps to cause the second; the second the third; and so on: 'I came, I saw, I conquered, and I brought home booty.' In Latin, 'et' (*i.e.* 'and') would mostly be inserted before all the Verbs (except the first) or before none. In English, as a rule, 'and' is inserted only before the last. In both languages it is assumed that 'and' (which signifies addition) joins sentences that are regarded as having an affinity or agreement with each other.

'And,' 'but,' 'or,' &c.

(ii.) This being the case, what is the Chief to do when he is rebuking Deerfoot for cowardice before the Tribe, and he wishes to say, 'The enemy advanced, you ran away.' If he leaves the words thus, he may give the impression that Deerfoot, being on outpost duty, *naturally* ran back on the approach of the enemy *to give the alarm*. But the Chief wishes on the contrary to say that Deerfoot's conduct was unnatural, and, so to speak, *outside* expectation. Now the Old English for 'outside' is 'by out,' 'be out,' or 'but.' So he will say here, 'The enemy advanced, *but* you ran away,' meaning that the two facts are *not* harmonious, but disagree.

(iii.) If the Chief is trying a suit in court, and it is clear that one of the two suitors (Deerfoot, suppose, and Longarm) is lying, he might say, 'One of the two, Deerfoot and Longarm, is a liar.' But after 'Deerfoot and Longarm,' one expects '*are* liars.' He might say, 'One of the two, Deerfoot, one of the two, Longarm, is a liar.' But this is long. In Old English, 'one of the two' is

'either,' of which another form is 'other'[1] or 'or'; so that he can say, 'Either Deerfoot, either Longarm, is a liar,' or '[or][2] Deerfoot or Longarm is a liar.'

Lesson 21.—Suppose we are comparing aloud the height of Deerfoot and Longarm. We cannot do this briefly at present with the words at our command. We might say, (1) 'Deerfoot and Longarm are tall; Longarm is much tall,' or (2) 'Deerfoot is short, Longarm is tall.' But, besides being lengthy, this might be false; for (1) in the first case Deerfoot might be 'short,' but Longarm less 'short,' and (2) in the second, Deerfoot might be 'tall,' but not so 'tall' as Longarm. We must therefore invent some form of comparison.

Words of Comparison

(i.) This we do by adding '-er' to signify 'of the two,' and 'est' to signify 'of the whole number.' It must be understood that when we call Deerfoot 'tall-er,' we do not mean that he is 'tall,' as compared with the average Tribesman, but only as compared with *one* Tribesman. Thus we speak the truth.

(ii.) But we want also to put the truth briefly. For this purpose we might begin by saying '*Whereas*, or *in whatever respect*, Longarm is tall, *in that respect* Deerfoot is taller.' Now, in Old English, 'than' or 'then'[3] meant 'in that way,' or 'at that time,' or 'in the way, or time, in which.' It can therefore express 'in what respect . . . in that respect.' Hence, putting 'Deerfoot' first, and omitting what can be supplied, we have 'Deerfoot is taller, *then*, or *than*, Longarm [is].'[4]

§ 5. *Possibilities*

Lesson 22.—Hitherto we have confined our language to that which *has been*, *is*, or *will be*. We have never spoken, and cannot yet speak, about *what may possibly be*.

[1] Different from the Modern English 'other.' In Shakespeare, 'whether' was often written 'wh'er.'

[2] 'Or . . . or' is used now only in poetry. The teacher will use his discretion as to giving the pupils the names Adversative and Alternative, as applied to (ii.) and (iii.). 'And,' if classified, should be called Consecutive, to distinguish it from 'therefore,' 'consequently,' which may be called Consequent.

[3] 'Than' and 'then' (like 'tum' and 'tam' in Latin) were mere varieties of the same word.

[4] Here or before (besides the Tenses of the Verb, Past, Present, and Future) the pupil may be taught their 'states of action, viz. Indefinite, Complete, Incomplete.

(i.) If Longarm wishes to make a bargain with Deerfoot he may try a *command*, thus: '*Give* thou me two sheep. I will give thee a pig.' But if Deerfoot does not wait patiently till the second sentence, he may suppose Longarm wants two sheep for nothing. Another way would be to use a *question*: 'Givest thou me two sheep? I will give thee a pig.' But here we have to depend on tone and order of words, and it is important not to depend on such things in bargains. We might use, as Shakespeare uses, 'Being (that)' for 'it being the fact (that),' and put 'Being (that)' before an Imperative Form:—'*Being* thou give me two sheep, I will give thee a pig.' Or we might use such a Conjunction as that mentioned in the last Lesson, to show that one is not speaking of *fact* but only of *relative* fact, '*Whereas* thou give me two sheep.' Lastly, we might use some word to signify stipulation, bargain, condition, or *binding*. '*Bound* (*i.e.* on the bond that) thou give me two sheep.' It is believed that our 'if' originally conveyed this meaning of 'binding.'[1] Hence we have adopted '*If* thou give me two sheep.' In order to make it clear that the bargain was not concluded, our ancestors were careful not to use 'givest' in if-clauses, and, even now, we still avoid it sometimes, as in 'if it *be* so,' 'if he *come*,' &c. But these 'if-forms' of Verbs are becoming very rare.

Moods

(ii.) In former times 'if-forms' were so frequent as to form a distinct *way*, *mode*, or, as it was called, *Mood*, of expressing the action of a Verb. The ordinary *Mood* of stating, or *pointing out* fact, was called Indicative, *i.e.* 'pointing out.' The Mood of Commanding was called Imperative. Then the question arose: What name was to be given to the Mood, or Moods, that neither point out fact nor command?

We might invent many such Moods and give them different Verb-inflections and names, *e.g.* a Wishing-Mood (such as we still use in poetry, '*Perish* the man'); a Purpose-Mood (such as we find in the Bible, 'Send her away that she *cry* not after us'); and the if-Mood above mentioned might be called the Conditional Mood. But Verb-inflections, when they become very numerous, are liable to be confused and dropped. In English we have almost dropped the inflectional forms for expressing these things, and have resorted to other means.

Lesson 23.—Suppose the Chief (without the aid of new Verb-inflections) wishes to tell the Tribe that victory is conditional on

[1] See Skeat's *Etymological Dictionary*.

their obedience to him. He may take the Verb 'shall,' which signifies 'futurity,' or 'will,' which signifies 'desire,'[1] and say, 'If the Tribesmen shall, or will, obey, then the Chief shall, or will, conquer.'

The Mood of Condition

In time, as the 'if' makes the conditional meaning clear in the 'if-clause,' he may omit the Auxiliary Verb there, but must retain it in the 'then-clause.'

(i.) But what if he wants to say that defeat will follow on cowardice? He may not like to use such ill-omened words as 'the Chief *shall*, or *will*, fall.' He may prefer to contemplate that not as a true future, but as a kind of almost impossible future.

Now what is past *cannot possibly be altered*. When we say, 'I *desired* to do so-and-so,' we generally mean that we did *not* do it. In Old English, 'desired' was represented by the Past Tense of 'will,' *i.e.* 'would.' And the Past Tense of 'shall' is 'should.' Hence the Chief may say, 'If the Tribesmen *should* (or *would*) flee, then the Chief *would* (or *should*) fall.'[2]

(iii.) Another way of doing this will be to use the Future Form 'am to' (*i.e.* 'am towards, am on the point of') thus: 'If the Tribesmen *were to* flee, then the Chief *would* fall.'

But why can we not say, 'The Chief were to fall'? For the same reason as that which prevents us from saying, 'The Chief should fall.' 'Were to' conveys a notion of constraint when separated from 'if.'

(iv.) If the Chief is reproving the Tribesmen about the past, he might say, 'If the Tribesmen should (or would[3]) have obeyed,

[1] Here the name Auxiliary Verb might be given. An interesting lesson might be added on 'shall' and 'will,' 'should' and 'would.' Those who have not been bred to use these distinctions may have some difficulty in *practice* to the end of their lives. But anyone can understand the *theory* (see *How to Parse*, pars. 87 and 237; *Shakespearian Grammar*, pars. 315–318).

It came to be considered rude to use 'shall,' 'should' (which imply necessity) about anyone except oneself, *i.e.* about any person but the First—except when some circumstance, *such as the intervention of an 'if,' or an Interrogative*, takes the sting of rudeness away. *Hence, though 'should' is kept in the 'if-clause,' it is changed to 'would' in the 'then-clause.'* 'I should' corresponds to 'you would,' for there is no rudeness in applying a word of constraint to *ourselves*. 'I *would* gladly know' is 'I should *will*,' *i.e.* like, to know (where 'gladly' is strictly superfluous). 'I *would* be grateful' is a modern mistake for 'I *should* be grateful.'

'Should' and 'would' represent the Subjunctive as well as the Indicative Forms, and this somewhat complicates their use. See note (3), p. 121.

[3] In 'If the Tribesmen *would* have obeyed,' the meaning is 'If they had *willed*, or, *made up their minds*, to have obeyed.'

then the Chief would have conquered.' But as 'shall' was omitted above in the 'if-clause,' so here we omit 'should,' retaining simply 'have' in its Past Tense. The 'if' makes its conditional meaning clear: 'If the Tribesmen *had* obeyed, (then) the Chief *would* have conquered.'[1]

Lesson 24.—How shall we express Purpose? We cannot use the Verbs 'will' or 'shall,' for we have employed them already to signify Condition. We therefore use the word 'may.' This signifies *ability* or 'might'; but it is also used to express interrogative desire, as in '*May* I come in?' Here—as in '*Can* I come in?'—the word has quite lost its old meaning of '*Am I able* to come in?' and means '*Am I permitted* to come in?' but it also implies desire.[2]

Purpose

To express purpose, we put before 'may' the Conjunction 'that,' *i.e.* 'in the way in which.' 'The Chief plans that [*i.e.* in the way in which] the Tribe may [*i.e.* is able, or may be able,[3] to] conquer,' or 'planned that the Tribe might [*i.e.* was able, or would be able, to] conquer.'

(ii.) Where we are not aiming at something hoped, but avoiding something feared, we sometimes use not 'may,' but 'should,' to express what will *necessarily happen unless prevented.*

(1) 'We {will give / gave} him water *that* he {*may* / *might*} drink it.'

(2) 'We {will take / took} away the poison *lest* he *should*[4] drink it.'

(iii.) In Old English we used 'whether' (*i.e.* which of the two?) in direct questions, *e.g.* '*Whether* art thou better [or *whether* art

[1] The 'if-clause' is called the Antecedent; the 'then-clause' the Consequent. Sometimes 'then' is omitted. It often conduces to clearness (like ἄν in Greek).

[2] Point out the ambiguity of '*May* come,' *i.e.* (1) 'It *is possible* that I may come,' or (2) 'I am *allowed* to come.' In (1) 'may' means 'I *might* be able' (see next note).

[3] The old Verbs 'may,' 'can,' 'shall,' 'will' (and their Past Tenses, 'might,' 'could,' 'should,' 'would') are not capable of having Subjunctive Moods formed for them by combining one Auxiliary Verb with another. Thus, though we can say 'If I should *be able*'; we cannot say, 'If I should *can*,' nor 'if I should *may*,' nor (except *very* rarely and in a special sense) 'If I should *will*.' Hence, 'I could,' 'I might,' are used to represent both Indicative and Conditional meanings: 'I was able,' 'I should be able,' 'I was permitted,' 'I should be permitted.' 'May' in '*may* the man perish!' is not indicative ('*is* he permitted to perish) but a 'wishing' Mood, '*perish* the man if possible.' 'You might' never means 'You *had* the power.'

[4] 'Shall' would be 'ill-omened,' as in Lesson 23 (i.).

thou not better]?' This has been dropped as superfluous. But suppose we ask a deaf man, 'Are you better?' He may perhaps not hear us distinctly, and, after telling us that he is very ill, may say, 'What was that you said?' In that case we do not like to repeat the question, as though we were still asking it, in the Present Tense. So we say, in the Past Tense, either (1) in Interrogative order, 'I asked, "were you better?"' or (2) in Indicative order, but with 'whether,' 'I asked *whether* you were better.' Here the old 'whether' is usefully retained because the order of the words does not show the Interrogative meaning. Other Interrogative Adverbs similarly used as Conjunctions are: when, where, why, whence, whither, how, &c.

Verbal Nouns

Lesson 25.—Purpose may also be expressed by Prepositions followed by Verbal Nouns, thus: (i.) 'I am going *on*, *to*, *toward* &c. fish-ing.' 'On,' thus used, was once spelt 'an, and the '-n' was dropped, so that 'I am going *on*-fishing' became 'I am going *an-fishing*,' then '*a-fishing*,' and lastly, 'fishing' (where the meaning is 'to fish'). (ii.) In 'I am going to fish-ing,' the old termination has been dropped, and we now say 'I am going *to fish*.'[1] (iii.) We use 'for' thus only in a few phrases, such as 'good *for* eating,' *i.e.* for the purpose of eating, 'ready *for* helping.' (iv.) In course of time, 'I am going *to fish*' and 'I am going *fishing*' became so similar in meaning that '*to fish*' *was used just like* '*fishing*,' *without any notion of purpose*, as in 'I like *to fish*.' When that became the case, 'for' was sometimes placed before 'to fish' in order to express purpose: 'I am going *for to* fish.'[2]

Verbal Nouns

Lesson 26.—When Prepositions and Verbal Nouns are used for Conjunctions and Verbs, *we gain in brevity, but we lose in clearness.* Thus, Condition may be expressed by 'on' (meaning 'on condition of'): '*On* [the] receiving [of] the money from you.' But 'on' might mean '*following* on,' and we do not know *who* 'receives.' The meaning will depend on the next words. For example, '*I will* buy the horse' shows that 'on receiving' meant '*if*, or *when*, *I* (shall) receive.' But '*he bought* the horse' shows that 'on receiving' meant '*when he* received.'

The Person might be indicated by using a Personal Adjective ('On *my*, *his* &c. receiving'). 'Receiving' is so different from an

[1] On the Dative in -enne, the Participle in -ende, and the apparent confusion of both with a form in -inge, see *Shakespearian Grammar*, par. 93.

[2] Compare the modern vulgar English, 'I am not going *for to* say what is not true.'

ordinary Noun that we do not like to attach an Adjective or even a Possessive Noun form to it. Hence we seldom say, 'On *John's*[1] hearing from you,' and never, 'On *this great philosopher's* hearing from you.' In such instances it is best to use Conjunctions.

Practical Applications

Clearness

Passing from the times of Deerfoot and Longarm to our own, we must review our stores of language, considering their defects and the best means of remedying them. Generally we shall find that the old inflected languages were forcible and clear up to a certain point, while ours covers much more ground but is less forcible and buys clearness at the price of brevity. Common sense will teach us when to use and when to discard the old forms. 'I had come' must not be used for 'I should have come' in prose—(1) because it may be ambiguous, (2) because it would be affected. But 'Had I come, I should have acted differently' is—(1) perfectly clear, (2) shorter, (3) in common use among the educated, (4) sometimes an agreeable variation as compared with 'If I had come.'

Grammar deals with *written* language. In *speaking*, we can emphasise words by laying vocal stress on them; in writing, unless we indicate stress by italics, we must emphasise by some other means. Such means are: (1) prospective 'it,' (2) Passive Voice, (3) antithesis. Thus, if we want to express '*You* said it' without italics, we must say: (1) 'It was you that said it,' (2) 'It was said by you,' or (3) 'You said it, not I.'

One or two rules for writing clearly may here be given, based upon the preceding Lessons:

(*a*) Be careful as to Noun and Verb forms in '-ing.' Owing perhaps to the old use of 'a-hearing,' many (and sometimes writers otherwise accurate) use the Participle as though it were preceded by a Preposition—*e.g.* '*Hearing* this, it was resolved to depart at once.'

(*b*) Verb forms in '-ing' are ambiguous. 'Walking on the ice' at the beginning of a sentence may mean '*While*, *when*, *because*, or even *though*, I walked,' according to what follows.

(*c*) In 'The man in the shop denied the theft, but confessed it at the station,' the ambiguity may be removed by putting 'in the shop' first, if it is intended to be Adverbial, or inserting 'that'

[1] 'Owing to the *party* having arrived late' is theoretically as erroneous as 'on *me* hearing from you.'

('The man that was in the shop') if Adjectival. Generally, the rule holds good that where a Relative Pronoun or Conjunction is omitted care must be taken lest brevity should create obscurity.

(*d*) 'He struck the man so that he staggered, and then dropped dead,' seems perfectly clear. But if the sentence had been preceded by other words—*e.g.* 'Pierced to the heart by the assassin, he struck the man so that he staggered, and then dropped dead,' 'dropped dead' might very well apply to the man assassinated. In any language (*e.g.* Latin) that had a Result Mood for 'staggered,' the Mood would determine whether 'dropped' was parallel to 'struck' (Indicative) or to 'staggered' (Subjunctive). Where sentences are thus ambiguous, break them up or repeat Conjunctions. The repetition of Conjunctions (though not the best remedy here) is of constant use for showing that a Verb is not Indicative but Subjunctive.[1]

(*e*) Pronouns cannot be so clear as the Nouns or Names for which they are substituted. A general rule is that 'he' &c. must refer to the last person mentioned. But there are frequent exceptions. In 'It was Thomas that struck John—*he* had been a good deal bullied,' 'he' would most naturally mean 'Thomas,' because 'Thomas' is more emphatic than 'John.' The remedy for such ambiguity is—(1) to use the Noun instead of the Pronoun; or (2) to use 'the former' or 'the latter';[2] or (3) to recast the sentence so as to get 'John (or Thomas), who had been . . .'

(*f*) In reported speech, the ambiguity of Pronouns is well known: 'He told his friend he thought he had better go home. Either (1) use the Direct Speech—'"I think," said he to his friend, "you (or I) had better go home"'; or (2) (which is rather stiff and formal) 'He told his friend he thought the latter had better go home.'

(*g*) Instead of saying, 'That I may be wrong is true,' we often prefer to place first a Prospective or Preparatory 'it,' and then to express what 'it' stands for, so that the emphatic word 'wrong' may come at the end of the sentence. But this Preparatory 'it' at the beginning may be confused with the Retrospective 'it.' Some authors make their meaning seriously and constantly ambiguous by loose uses of 'this,' 'thus,' 'in this way,' 'of this sort.'

(*h*) As a general rule, repeat those words which indicate whether a Verb is Principal or Subordinate. 'You dislike me

[1] *How to Write Clearly*, rule 37.

[2] We (rightly) dislike using 'the former,' 'the latter,' in vernacular narrative and simple style. In Latin, 'ille' and 'hic' are shorter.

because I tell you the truth, and you like flatterers,' means either (1) 'because I tell you . . . and *because* you like,' or (2) 'You dislike me because I tell you the truth. You like flatterers.' In 'It was a failure because there was no forethought, *and* the soldiers now had no confidence in their General,' write 'and because': or begin a new sentence with 'The soldiers now . . .'

(*i*) *The Principle of Preparation.*—Surprises are to be avoided unless epigram is intended. When it is needed to state what is to be said on both sides of a subject, we must prepare the reader from the beginning for a second aspect that will soon succeed the first. For this purpose we use Conjunctive Adverbs such as: (1) 'on the one hand,' (2) 'not only,' (3) 'partly,' (4) 'either,' (5) 'in the first place'; which correspond to: (1) 'on the other,' (2) 'but also,' (3) 'partly,' (4) 'or,' (5) 'in the second' (or 'but again,' &c.). These may be varied with: (1) 'indeed[1] . . . but still,' (2) 'it is true that . . . yet again,' (3) 'grant that . . . yet even then,' or 'nevertheless,' (4) 'no doubt . . . yet, after all,' &c.—*e.g.* 'He *certainly* promised . . . ; *but* what were his words?' These Adverbs do not answer to any of the questions, How? When? Where? or Why? but to the question, 'How is this statement to be regarded?' to which they reply, 'It must be regarded as *incompletely true* till coupled with another truth.' In the lively style these Conjunctive phrases are out of place, but in the Periodic style they are often most valuable. Only, in using them, remember Bacon's warning not to 'jade anything too far.'

These are but a few of the rules that might be deduced from a study of the weak points of our language. Many might be noted as a result of comparing English with Greek or Latin or other richly inflected languages.

Enlargement of Vocabulary

Our vocabulary must be enlarged by reading and listening. But we shall read and listen much more fruitfully if we prepare ourselves to receive new words by *trying to make them.* This can be done in various ways.

(*a*) Consider such a virtue as 'courage.' It may be regarded as the middle or mean between two extremes. What are they? 'Rashness' and 'Cowardice.' Do this with other virtues. Consider 'frankness.' What is one extreme? 'Unreserve, or

[1] Note that 'indeed' has quite a different meaning in 'Was he angry? He was *indeed.*' In 'indeed . . . but still,' it means 'I *admit* it to be a *deed* (or *fact*).' Similarly, 'certainly' means 'I *admit* it to be *certain.*' Under appearance of stating that it is 'certain,' or a 'fact,' you suggest that it is incomplete.

excessive communicativeness.' What is the other? 'Reserve, self-absorption.' This exercise will often show that single words, exactly to the point, are not known to the seeker, and perhaps do not exist in the language. Then take such an extreme as 'hurry' or 'worry,' and find out the corresponding extreme and the mean. If you cannot get the exact words, come as close to them as you can for the present; and, in the course of reading or listening, you will snap them up when you find them.

(*b*) Take some general notion, such as *time*, *space*, *action*, *quantity*, *boundary*, *motion*, *thought*, *speech*, *mind*, *body*, *substance*. Each of these will have a great number of dependent notions, which can be well learned by taking them in groups that show the necessity of each word, and its connexion with the rest of the group. Take *time*, for example. We want words to apply to occurrences that happen at the same time (simultaneous), to those that happen in the same period (contemporary), that which is only for a time (temporary), only for a short time (momentary), for all time (eternal), too soon (premature), at the right time (seasonable), very long ago, (ancient), the present as compared with antiquity (modern), the time between antiquity and modern times (mediæval).

Next take *motion*. That which causes motion (force), motion forward (progress), backward (retrogression), upward (elevation), downward (depression), step by step (gradation), the rate of motion (velocity), increased motion (acceleration), diminished (retardation), the tendency of anything to cause motion in another thing towards itself (attraction), the sudden communication of motion (impulse), motion asunder (disjunction), motion resulting in impact (collision), hasty and inconsiderate motion (precipitation), the tendency to move downwards (gravitation), &c. &c. (From *English Lessons*, pp. 18–19.)

(*c*) Take the questions How? When? Of what? Apply them to the word 'think' and obtain words suggested by thinking (1) rightly, slowly, deeply; (2) too soon, too late, at the right time; (3) of oneself, of the interests of others, of one's country, of the future, of trifles.[1]

(*d*) Another way is to build up new words from old words and prefixes. Take such a word as 'go' or 'get' and place Old English prefixes before it: 'forego,' 'forget,' 'undergo.' This helps us but little. But now take the Latin '-cede,' which also means 'go,' and

[1] See *English Lessons*, pp. 18–20.

place Latin prefixes before it, 'ac-cede,' 're-cede,' 'pro-ceed,'[1] 'ex-ceed,' 'suc-ceed,' &c. Do the same with '-ject': 'sub-ject,' 're-ject,' 'pro-ject,' 'e(x)ject,' &c. Then note words that *might have been, but have not been made:* ad-ject, in-cede, super-cede, super-ject, de-cede, de-ject (only used in 'dejected'), con-ject, dis-cede, dis-ject, trans-cede, trans-ject. What would be the meanings of these words? How do we express them in English?[2]

(*e*) At this point may come the consideration of 'cross-breeds,' such as '*un*-natural,' 'gentle-*ness*,' '*bi*-gamy' (for '*di*-gamy'), &c. We are to *use* such words when they are useful, but not to *make* them. Nor are we to imitate Shakespeare in saying 'equal-ness' or 'crime-less,' for the fact that Shakespeare's authority has not naturalised them shows that 'equality' and 'innocent' suffice. We may say 'dislike,' but not, with Chapman, 'dis-lived,' *i.e.* deprived of life. We may certainly say 'anti-reformer,' 'anti-socialist,' but some would object to 'pseudo-student' because 'student' is not of Greek origin. Yet 'sham student' does not suggest quite the same thing.

The custom of the best authors must be our guide until they have been overborne by general consent, which alone is the ultimate court of appeal.

Metaphor

(*a*) How shall we describe in words what *we have seen but another has not*, the action of a ship, for example, making its way through the sea and leaving a 'wake' behind it? What is the use of saying 'wake' to a Warwickshire ploughman who has never seen the sea? But he has seen a plough and a furrow. So we may say, 'The ship *ploughs* or *furrows* the sea.' Thus we take the action of the plough on the field, and *transfer* it to express the action of the ship on the sea. This *transference*, or 'carrying across,' we call by its Greek name 'Metaphor,' and we say that 'A Metaphor is a *transference* of the word expressing the relation between two or more things, so that it may express the relation between two or more other things.'

[1] Here, show the reason for the difference of spelling (*How to Parse*, par. 283). Comp. (*ib.* 284) 'act-or,' 'col-our,' 'paint-er.'

[2] Elder pupils might be invited to consider the claims of any of these words to become English, and the reasons why they have not come into use. Instead of 'super-ject,' we have 'super-impose' (which is not so good a word for some purposes). 'Super-cede' is nearly expressed by 'super-sede.' 'Cast down' has kept out 'de-ject,' though 'downcast' has allowed 'dejected' to pair with it.

Many useful lessons may be given under (*d*).

(*b*) From things unseen by the ploughman, we pass to things that no man has seen or can see. For example, how shall we express varieties of *sound?* We might do it by drawing words from the vocabulary of *sight*, and might speak (as the Romans did) of a 'brown' voice to mean 'hoarse,' and might describe the sound of a trumpet as 'scarlet.' But, as a fact, we have drawn from our vocabulary of *touch* (and *taste*). The reason probably is that things touched seemed most substantial and knowable, so men applied epithets to them first, and then transferred these to the comparatively unknown things that cannot be touched. So we speak of 'a sweet voice,' 'a soft whisper,' 'a sharp scream,' 'a rough hard voice,' 'a piercing shriek,' and Aristophanes describes a bird's song as 'pouring honey over the thicket.'

(*c*) This shows us how to make words for things that cannot be perceived by the senses. We must *transfer* the sense-vocabulary and speak in Metaphor, describing things not perceivable by the senses in the language applied to things perceivable by them. The mind must be supposed to have something corresponding to a tangible body, so that we may say, 'His mind was *impressed*, *struck*, *wounded*, *impervious*,' &c. We must regard the mind as having something corresponding to an 'eye.' This, with Hamlet, we may call the 'mind's *eye*,' or the 'imagination,' *i.e.* the power of forming images. Hence we can say that our mind is 'dazzled,' 'enlightened,' 'darkened,' 'blinded,' &c. The mind may also have a mouth and a stomach, so it can '*feed* on' beauty, 'inwardly *digest*' a good book, '*swallow*' a falsehood, or, as Shakespeare says, '*chew* upon' new truth. It follows from the deficiency (above implied) of the ear vocabulary (and still more, of the smell vocabulary [1]) that we can rarely apply it to the mind. Perhaps no author has ever described the mind as 'deafened,' or 'struck dumb,' though we could say, 'His mind was deaf to all argument.'

(*d*) These considerations ought to guide us in distinguishing mental power as we distinguish bodily power. The mind, as well as the body, may be 'agile,' 'swift,' 'versatile,' 'nimble,' 'supple,' 'well-trained,' 'light,' 'well-knit,' 'well-proportioned,' 'healthy'; it may be 'strong,' 'slow,' 'ponderous,' 'steadfast,' 'awkward,' 'untrained,' 'ill-knit,' 'dis-proportioned,' 'sluggish,' 'robust.' These are *general* qualities. Less frequently we may say that the mind is subjected to the *accidents* that befall the body, 'wounded,' 'diseased,' 'maimed,' 'paralysed,' 'fettered,' 'fevered'; but hardly

[1] There are a ew metaphors borrowed from 'scent' in hunting.

'breathless' (unless in some explanatory context [1]), and certainly not 'rheumatic' or 'gouty.'

(*e*) It is essential to a good Metaphor that, taken literally, it should be manifestly false, and should not approach or suggest literal truth. 'A king is the pilot of the State' is a good Metaphor. 'A careful captain is the pilot of his ship' is a bad one. Metaphors should not be mixed until they have ceased to be recognised as Metaphors. We may say, 'I will not insist on (*lit.* 'stand on') this point,' and '*under* (instead of *in*) these circumstances.' Some people even speak of 'unravelling an obscurity.' It is very common, but hardly correct, to speak of 'the shadow,' and even 'the shadow of a shade,' 'of a foundation.' Foundations do not, as a rule, cast shadows.

(*f*) A Metaphor may exhibit one or more aspects of a truth. 'The ship ploughs the sea' represents only the penetrative action of the ship. 'Tribulation is the plough of the patient mind,' represents both the pain caused by the piercing and the preparation for fruit-bearing.

(*g*) Language without Metaphor would leave men almost without minds; language with Metaphor (misunderstood) leads men's minds constantly wrong. Every Metaphor can be expanded thus: 'As the known subject acts on the known object (or in the known circumstances), so the unknown subject acts on the unknown object (or in the unknown circumstances).' For example, 'a striking thought' is expanded into 'As the stone strikes the body, so the thought [ ] the mind.' [2] 'An indelible thought' implies, 'As a word is *written* on paper, so a thought is [ ] on the mind.' Neither of these Metaphors is literally true. They express two different aspects of what is almost universally believed to be true; and each is useful. Some thoughts 'strike,' and sting for a time, but only for a time; others 'are written,' more or less durably, perhaps permanently.

A sentence [3] that has only one Stating Verb and one Subject is

[1] For example, 'The *panting* mind toils in vain to keep up with this discursive author.'

[2] This Proportion expresses the *similarity* of the relation between the two things in the first couple to the relation between the two things in the second couple. It is therefore called a Simile.

[3] 'John came and went' is a condensation of 'John came' and 'John went.' 'John came that Thomas might go' has one Stating Verb (for 'might go' makes no statement) but two Subjects. It is, therefore, not a simple sentence.

called a Simple Sentence.[1] If a Simple Sentence is connected with one or more following Simple Sentences by the Conjunctions 'and,' 'but,' 'so,' 'then,' &c., each of the following sentences is regarded as *ranked with* or *co-ordinate with* (Latin *co-*, 'with,' *ordin-*, 'rank') the first. The mark of a Co-ordinate Sentence is that it can generally stand as a sentence by itself, preceded by its Conjunction.[2]

Analysis of Sentences

Sentences that express Nouns, Adverbs, or Adjectives, in a longer sentence, are called (relatively to the Stating or Principal Verb of that sentence) subordinate: (1) (Noun) 'I say (*that*) *this is false*'; (2) (Adverb) 'He came (*after*) *he had seen me*'; (3) (Adjective) 'I saw the boy *that cleans the boots*.'[3]

If the terms Noun, Adverb, and Adjective, are taken as including Noun phrases, Noun sentences, &c., we may say that the longest and most complicated sentence can only contain (1) one Principal Verb; (2) Adverbs; (3) a Noun Subject; (4) a Noun Object (Direct or Indirect); (5) Adjectives qualifying the Nouns in the Subject, in the Objects, and in the Adverbial phrases or sentences. By inserting Adverbs and Adjectives, a short sentence may be amplified into a long one; and the longest may be reduced (so far as concerns the Grammatical skeleton) to a few words. Take, for example, 'This is false.'

(1) Insert Adverbs of emphasis, 'Without doubt,' 'In the opinion of all people of competent judgment,' &c. (2) Instead of 'this,' insert a Noun that implies a Verb, and add Adjectives and Adverbs. 'So unfounded an assertion as this, [asserted] in the face of unquestionable fact, and without the slightest attempt to ascertain the truth.' Or add Participles with Object, 'Such an assertion, implying, nay, almost openly maintaining, that his predecessors in this honourable office have, without exception, stooped to take bribes.' (3) Insert Adverbs of Circumstance or Condition, 'Whatever he may assert to the contrary,' 'Whether he denies it or not,' &c. (4) Adverbs of Degree, 'in large measure (false),' 'so (false)

[1] Thus, in 'I laughed, for, or because, *I was amused*,' 'for' is said to introduce a co-ordinate, 'because,' a subordinate sentence. For we could write, as a new sentence, 'For I was amused,' but not 'Because I was amused.' The distinction between co-ordinate and subordinate, though convenient, is not logical.

[2] What follows applies only to Stating Sentences, but is easily applicable to Interrogative and Imperative Sentences.

[3] In Adjective Sentences introduced by the Relative Pronoun, the Pronoun must be repeated Demonstratively in order to make up the sentence: 'That (boy) cleans the boots.'

that no one with any pretensions to reason can for a moment venture to assert its truth,' &c.

A little practice in putting sentences thus together and taking them to pieces will enable the pupil to arrive at the meaning of any sentence, provided he begins with (1) the Principal Verb, ascertains (2) the Subject and (Direct or Indirect) Objects, or, if there are no Objects, (3) the Statement made about the Subject, and then (4) the Adverbs and Adjectives (or Adverbial and Adjectival Sentences). Of course a Subordinate sentence may itself contain Subordinate sentences, and may be taken to pieces like the Principal sentence.

(*a*) Note the ambiguities arising from the absence of any Mood to represent Reported Speech. 'He said that I did not come, though I had assured him I had come,' may mean (1) 'Though I had assured him I had come, yet he said "You did not come,"' or (2) 'He said, "You did not come, though you had assured me you had come."' In (1) the 'though-sentence' is Adverbial, or Subordinate, to 'he said.' In (2) it is subordinate to 'You did not come.' (*b*) In 'I heard it from Thomas, who heard it from John,' some would say that 'who . . . John' is a Subordinate sentence, but 'who'[1] is equivalent to 'and he,' and introduces an implied Co-ordinate Sentence.[2]

Spelling

Nothing but practice and a training of the eye by reading and writing can teach spelling effectually. But some of the anomalies of English spelling may be explained so as to afford some mental exercise. For example, 'proceed,' 'exceed,' and other words in 'eed,' came early into the language and received an Anglicised spelling; 'precede,' 'recede,' came later, and retained the Latin or French spelling.[3] And so on.

Punctuation

A written 'stop' implies a vocal stop or pause. We do not pause, as a rule, between words or phrases that are *naturally joined together*, *e.g.* between Verb and Subject, Verb and Object, Preposition and Object, Noun and Adjective, Verb (Intransitive) and Adjective (or Adjectival Phrase) completing the Verb.

[1] 'Who,' 'wherefore,' are sometimes placed at the beginning of sentences in the Bible.

[2] The most useful kind of analysis of Sentences is that which avoids technical terms and exercises the pupil in answering such questions as, 'What does this or that word, or group of words, tell us?' And then, 'What name do you give to it?'

[3] *How to Parse*, par. 283, comp. 'degree (Fr. degré),' 'agreeable (Fr. agréable).' Compare 'confidant,' 'dependant,' with 'confident,' 'dependent.'

As regards Verb and Adverb, there is no pause where the Adverb *follows the Verb so as to complete its meaning.* But (*a*) an Adverb preceding its Verb is almost always separated from it by the Subject, and in that case—especially if long or emphasised—it is regarded as a separate 'section' (Greek 'comma'). Then a 'comma' is inserted: '*Very gradually*, his health and strength returned.' (*b*) Where the phrase does not complete the meaning of the Verb, a comma intervenes between it and the Verb: 'Away he went, *in spite of all that could be done to stop him.*' Hence we deduce a general rule. When a word is separated from its Grammatical Adjunct by an intervening Phrase or Sentence, the Phrase may be preceded and followed by a comma.[1]

In 'John, Thomas, and Henry came,' 'John' and 'Thomas' are separated from their Verb, and therefore followed by a comma: 'Henry' is not separated, and therefore no comma follows it. In 'A., B., and C., are very different,' a comma may or may not follow C.—C. is not the subject of 'are.' The sentence may mean 'A., B., C., [*these things, I say,*] are very different.' Hence we deduce another rule: 'A stop sometimes represents "namely," "these," "this, I say," "these, I say,"' &c.

A comma represents the omitted Verb in 'To carp is easy; to criticise, difficult.' It may be inserted, to represent 'namely,' in 'Who does not know the proverb, that seeing is believing?' A break (—) represents 'What do you think?' or 'Though you would not expect it'—*e.g.* 'Hence it came to pass that the Land of Promise was called in the end—Palestine, that is to say, Philistine.' In order to avoid ambiguity in lengthy sentences, a pause is often naturally made, and a comma, in such cases, is rightly inserted. In 'What you say is clear,' there is no ambiguity and therefore no comma. In 'That he made a mistake in assuming this is clear,' a pause, and therefore a comma, is right after 'this.'[2]

In 'I acquiesce in, I expect, nay, I desire, an amicable settlement,' the voice naturally pauses after 'desire,' and consequently a comma should be inserted. The speaker takes breath after the

[1] Where the phrase is short, the pause slight, and the sense clear, it is best to omit the comma.

[2] Mentally, we take breath, and say, '[This proposition, I say,] is clear.' It might also be argued that the practical Subject ('that he made a mistake') is separated from its Verb ('is') by the Adverbial Clause ('in assuming this'). The comma should be omitted in such a sentence as 'A, B, C, D, and E are coming,' unless the speaker makes a pause after E, as if to say '*all these* are coming.'

list of Verbs, and the comma (which stands for 'this, namely' shows that 'desire,' *though it happens to be nearest to the Object, is not more closely connected with it than the other two Verbs are.* The same applies to a great number of sentences, which printers often correct erroneously: 'The Scriptures were now regularly taught, interpreted, and explained, *by the Scribes.*' A comma should precede 'by the Scribes' to show that the words apply to the *three preceding Verbs*, and *not to 'explained' alone.* In reporting speech in the Third Person, some treat 'that' as if it were equivalent to the omitted inverted commas, and punctuate before it: 'He replied, that . . .' This separates the Object from the Verb, contrary to Grammatical Rule: and generally we should make no pause before 'that.' A comma before 'that,' in 'It was the common belief, that . . .' might be justified by some on the plea that the comma means 'namely.' But the preparatory or prospective 'it' has so prepared the way that a pause is hardly necessary. Pause is often a matter of taste. Some may regard an Adverbial Clause as detachable from the Verb; others, as so closely connected with the Verb that it is needed to complete the meaning. The former will insert the comma, the latter will omit it. Avoid congestion of stops, as in '*So, if, after all, in spite of this, when the post comes in*, you decide thus, let me know.' Commas should not separate 'and' or 'but' from 'if,' unless emphasis is to be laid on the '*and-clause*' as an important *addition*, or on the '*but-clause*' as an important *subtraction.*

The use of semi-colons and colons must be learned by thought as well as by observation of the best authors. Bacon uses semi-colons freely, and they are of great value in good hands. But the right use of all punctuation depends largely on the sense of rhythm and proportion in a sentence, and cannot be reduced to detailed rules.

The explanation of irregularities to pupils is of little use unless it leads them to explain for themselves. For explaining we must do two things: (i.) Ascertain the Regular Construction; (ii.) Ascertain the Causes[1] of Irregularity.

Irregularities

The pupil can generally, with a little assistance, tell what the regular construction would be.[2] It must be then pointed out to

[1] 'Causes' or 'Cause.' Emphasis should be laid on the fact that there are often at work together more than one of the three causes mentioned later on.

[2] Often he will need some help. For example, in 'It is you that said so,' he must be shown the Anglo-Saxon way of expressing John vi. 63 ('Spirit is *it that* giveth life'), which is equivalent to '*It that* giveth life is Spirit.' Then he will see that the modern construction is explained by '*It that* said so is you.'

him that it is as natural for a language to be irregular as for a stone that is thrown (not dropped) to describe a curve. Then the Causes of Irregularity (that is to say, of attraction from the straight line) must be set forth, with instances: (i.) Mixture of constructions, as when we mix '*a* hundred *of* sheep' with '*hundred* sheep,' and make '*a hundred* sheep.' So, in the Bible, we say, '*All we* have gone astray,' but in Modern English, mixing it with 'some, many, ten, *of* us,' we say '*all of* us.' Or, we mix '*your* book' with the thought of '*John's* book,' '*his* book,' and other possessives in '-s'; and then, when we want a strong form at the end of the sentence, we say, not 'this is *your*,' but 'this is *yours*.' (ii.) The desire of Brevity—*e.g.* 'He loves her as [*he would have loved her being*] a daughter.' (iii.) The desire of Smoothness, or (especially in poetry) of emphasis. This explains the retention of old forms, such as the Adjectival form 'none' (instead of 'no') for emphasis at the end of a sentence: 'Hope have I *none*,' 'It is *mine*,' &c.

Poetry

The best old Poetry is more read than the best old Prose, and much more imitated. Hence, even modern poetic diction is somewhat more antique (though not antiquated), preserving more of the old inflections, and more of what we should call, in prose, inversions of order. Poetry, said Milton, should be 'simple, sensuous, and passionate.' Being 'simple,' it dispenses largely with complex sentences, Subordinate Conjunctions, Relative Pronouns. Being 'sensuous' (*i.e.* appealing specially to the senses), it abounds in picturesque epithets, sometimes preferring them to Nouns, as when it speaks of 'the blue,' 'the dry,' 'the azure,' 'the dank.' It also introduces new and striking Metaphors. If it is ever lengthy, as compared with Prose, it is when it deals in Similes. Being 'passionate,' it deals with Rhetorical Question, with the 'Wishing-Mood' above mentioned ('Long *die* thy happy days before thy death!'). It discards all hampering rules, expecting its readers to interpret in sympathy, and sometimes sacrificing obviousness to force, vividness, and brevity. It prefers Adjectives to Adverbs ('scarce' to 'scarcely,' 'liberal' to 'liberally'), dispenses with the Interrogative 'do' ('Gives not the bush as sweet a shade'), and generally with Auxiliary Verbs.

In the foregoing suggestions, Spelling and Punctuation come almost last; but no teacher will infer that these subjects are to be reserved for the older pupils. The same non-inference applies to the remarks on Poetry and to the explanations of Irregularities.

The latter would, as a rule, come late; but, if an irregularity came in the way of the very youngest children in such a shape that they could be helped to explain it for themselves, and thereby to prepare themselves for systematically explaining other difficulties—there should be no hesitation in using the opportunity. And certainly children ought not to be allowed to study Poetry without a hint or two as to our peculiar indebtedness to our forefathers for so precious a gift, and without a warning that they must consequently be prepared to find, in Poetry, the old-fashioned words and forms of speech of those from whom we have inherited it. No good system of English teaching will ever keep pupils for one year on Grammar, for another on Etymology, for another on Poetry, and for another on Analysis of Sentences—still less, for one year on Verbs and Adverbs, for another on Nouns and Adjectives, and so on. The pupil's knowledge should be like a living body, not like carpenter's work. It should grow all together, not be put together in bits. At the same time, subject to this preliminary protest, I should say that the teaching of English might be roughly divided into sections that might be studied in order as follows:

A Scheme of Teaching

1.—The Parts of Speech in a simple sentence:—1st, the need of them; 2nd, how to distinguish them in a sentence; 3rd, how to define them; 4th, how to name them. Some simple facts about the order of words in Poetry. The enlargement of the Vocabulary by answering the question, How? applied to Verbs; What sort of? applied to Nouns.

2.—The Parts of a Sentence, Phrases, Clauses, Compound Sentences, Complex Sentences. The enlargement of the Vocabulary by supplying blanks in passages read aloud by the teacher. Inflections. Poetic Words and Inflections.

3.—Metaphor. The enlargement of the Vocabulary by Metaphor and by the use of Latin prefixes and affixes. Analysis of Complex Sentences.

4.—A review of the weak and strong points of English, and of the causes of obscurity and weakness, with a view to writing clearly and forcibly. Enlargement of Vocabulary by the use of Greek words, prefixes, and affixes.

EDWIN A. ABBOTT.

ENGLISH LITERATURE

Why English literature is a comparatively recent addition to school curricula

If a writer of fifty years ago had set about suggesting methods of teaching English literature in English schools, he would have felt it incumbent on him to begin with an apology for so doing. Since that time public and professional opinions have happily changed, and no such apology is now needed; but if teachers would thoroughly understand some of the peculiar difficulties of their task, it would be well to ascertain, if possible, why the study which we have come to think a most necessary part of English education should for so long a time have suffered such neglect.

It will at once occur to us that the most powerful influence at work was the tradition confining education mainly to Latin and Greek, which occupied most, if not all, of the time that was regarded as available in school life for the serious pursuits of youth. But the exigencies of school time do not altogether explain the extraordinary persistence of the exclusively classical tradition well into the present century. There was also involved throughout a certain sentiment that learning was something not vulgar, something that was the privilege of gentlehood or the mark of professional competence and importance, and therefore peculiarly associated with those classical tongues which had been from time immemorial the means of communication between accomplished persons of all countries. Learning, then, which was the only generally understood purpose of school teaching, came to mean mostly a knowledge of Latin and Greek. To this end not a little was contributed by the peculiar constitution and traditions of our great universities, which for so long were the strongholds of a learned clergy of a state church, whose bases of tradition and doctrine lay, of course, for the greater part in records written in those two languages.

Everyone knows how universally Latin and Greek served not only as studies for professional purposes but also as means of

discipline, of discipline rough both in itself and in the physical sanctions by which it was enforced, but, as every Englishman must gratefully acknowledge, not entirely ineffectual. It is not, however, the business of this chapter to account for the success of the classics in producing, though of course with marked limitations, fine types of men approximating to the proverbial scholar and gentleman. It is enough to remember that as increasing numbers of young people passed through the schools and universities, the study of Latin and Greek came to be, for the greater part of the educated population, a mere routine gymnastic, sufficing as a complete professional preparation for comparatively few.

At last, in the early part of the present century, when travelling became more general, observation and comparison more acute, and the views, methods, and practices of other countries more familiar to us, it began to be felt that our school curriculum was very narrow; and efforts were therefore made by a succession of able school-masters to enlarge its bounds.

But the comparatively late inclusion of English literature needs still further explanation. Why should the English have lagged so long behind other nations in giving due recognition to the claims of their own great writers to serve as means of school education? To the reasons already suggested we must add the very character of our literature. In spite of the strong classical tradition of English learning, English writers, unlike English school-masters, broke away from it at a very early period. If, for instance, we compare the literary history of England with that of France, we find that up to the century in which we live the greatest French authors were afraid or disinclined to depart from the forms which could be directly or inferentially justified by the practices and opinions of the writers and critics of Greece or Rome; and French opinion for two hundred years and more set down the works of our greatest writers as formless and chaotic. Nay, the surpassing greatness of the English literature of the sixteenth and seventeenth centuries was scarcely appreciated even by such famous and accomplished Englishmen as Pope and Johnson. And for this the main reason was that the finest specimens could not be brought under any body of rules that could be formulated from a comparison with Greek and Latin classics or under critical canons that found favour in Athens or Rome or Alexandria.

It is clear, then, that the great English writers could not be so easily used by English teachers as the great Frenchmen by French teachers. There was less formal precision, less accuracy and

exactness about them. There seemed to be more obvious faults of outline and expression, and it was hardly understood that these apparent defects might be the very language of an art which, though not so readily reducible to formulas was subtler and nearer inspiration than that which was sanctioned by tradition.

Something, too, may have been due to the torpidity of English national self-consciousness. We English take for granted the existence of a sufficient patriotism amongst us for all purposes that we regard as practical. To nations on the Continent, however, who have been more closely assailed by ideas of national disruption and more continuously excited by struggles for national existence, every additional means of giving life and alertness to the sense of national unity was a welcome weapon. So, for instance, the same spirit that displays the national flag conspicuously above every school door in France makes the French national literature an inevitable part of the school curriculum. It is certainly not left to the option of the teacher to take it or leave it.

These historical considerations are all very pertinent to the methods by which English literature may be taught to good effect or in vain, by which it can or cannot be brought home to the boys and girls in our schools of all grades.

Immediate application of these considerations

The English teacher in a secondary school may fortunately still count in most cases on his pupils' possession of some knowledge at least of the classics and of classical story, and he may therefore be able to use them for illustration and comparison. This is one advantage, at all events, and not a small one, that he will derive from the persistence of the classical tradition in our school teaching. He will, on the other hand, find it necessary to use his English author less as a means of logical and grammatical discipline than he would a Latin or Greek writer; he will have in view disciplinary ends of some difference. It is moreover to be hoped that even if his pupils know no classics at all, the mental processes of comparison and discovery, in which the careful reading of Latin and Greek is such admirable exercise, will be supplied by the really scientific pursuit of the study of physical science which our educational institutions have not yet succeeded in generally furthering. He will, again, find it desirable to give close attention not only to the great English romantic writers but also to the more formal and 'correct,' through whom it will be easier to train his pupils to appreciation and imitation of the more formal rhetoric. And, finally, in the discharge of his duty as a teacher of English youth,

he may do much to cultivate the patriotic spirit to a noble and profitable end in inspiring his pupils with a lively admiration for the incomparable literary inheritance which they share with all those who are of their own blood and speak the same language as themselves.

Now it is to be observed on the threshold of our task that English is the language in which our pupils think. On the proper understanding of this simple fact will depend much of the real effectiveness of our teaching.

Our pupils think in English. Hence certain guides to method

First of all, since the content of thought is more important than the form in which it is expressed, however indistinguishable the two may be in the finest works of literary art, our first aim in the use of English literature as a means of education should be to supply the right kind of material for thinking, the right ideas; and to this end our endeavours should be turned from the earliest stage of school life up to the latest. Hence we may proceed to lay it down that the pupil's ready apprehension and willing retention of the matter must rank in the estimation of the teacher before everything else, and that analysis of and drill in its form must be subordinated to these. It follows, too, that in selecting material we ought not to be satisfied with less than the very best within the pupil's comprehension. We should be guided by this principle even in the choice of reading-books (or 'readers' as they are improperly called) for the very earliest stages of secondary school life. It is a serious error to use slipshod or commonplace matter, or even to devote our reading exercise, in all but quite the earliest stages of teaching, to manuals whose express purpose is the conveying of information in any particular branch of knowledge; unless, of course, such books possess literary merits no less indubitable than their value as manuals of knowledge.

In the next place, since the grammar and habit of the mother-speech have been to a large degree already acquired unconsciously, the material supplied by the study of English literature serves as an admirable gymnastic even in the higher stages of school life and especially if the English pupil has learnt or is learning another language; for we thus secure a constant supply of examples for historical and comparative grammar. Another advantage attaching to the use of our native tongue for literature teaching is that by it we may insinuate, so to speak, at an early stage of school life many branches of study which we have been heretofore accustomed to place later; as prosody, for instance. Indeed, we shall find it even necessary to do this in order to develop as fully as possible

all the means that lie to our hands for the kindling of interest and intellectual enjoyment. These points, however, are more pertinent to a consideration of the study of grammar than of literature in the wide sense we are giving the term for present purposes.

It is to be noted again that this study of the native literature imposes on us the necessity of cultivating at every stage of school life the powers of expression. It is true, a thousand times true, that no teacher is doing his duty who accepts from his pupils speech that is slovenly, inaccurate, or truncated, whatever may be the subject of study; but no lesson can be so rich in opportunity for exercise in expression and for pointing the moral of the effective or ineffective use of language as the lesson in literature. To endeavour to do this solely in connexion with an ancient or imperfectly apprehended modern tongue is to swim in shackles. English folk are probably behind most contemporary peoples in the common power of clear, accurate, ready, and forcible speech; this is partly due to our general neglect of the study of our own great books, but more still to the vagueness and narrowness of our school notions of 'composition,' if indeed we may be said to teach English composition at all. Those few of our pupils who have learnt to write fair Latin prose have indeed learnt many incidental lessons of inestimable value; but to the gain made thus by these few in exactness and command of logical expression we might add for all our pupils, by as devoted a study of English authors and their artifices of composition, a freedom and copiousness of diction which the constrained conditions of Latin prose writing cannot possibly give. In truth, although it is generally acknowledged that the power of effective composition, or style, can come, except to the heaven-born, only by constant and careful exercise, the deliberate and ordered practice of our own speech is one of the most seriously neglected parts of our school curricula.

Finally, seeing that our pupils think in English, the English lesson must needs be of all school exercises the most compendious and it is therefore at once the test and the opportunity of the good teacher. For the ground opened is so extensive that the need for careful choice of matter of comment meets us at every step. With every paragraph we are to satisfy ourselves afresh how much logic, history, ethics, æsthetics, geography, grammar, and so forth, are necessary for the profitable treatment of the text. Any attempt to lay down beforehand hard and fast rules would be the purest pedantry; the choice must be left to the teacher, to the person best acquainted with his form's general aptitudes and particular needs.

To this point we must recur again when we proceed to consider the use of printed notes ; it seems possible, however, to conclude at once that the teaching of English literature and the exercises in English composition should be the chief duty of the master of the form, and of no one else. If specialist teaching is always to some extent an evil, though may-be a necessary evil, it is particularly undesirable to entrust the teaching of English and all that it implies to any but the person most familiar with his pupils' exact mental condition.

We shall take it for granted that, throughout the whole course lying before the ten-year-old pupils with whom we set out, we may be able to give not less than three hours a week to 'English' ; and this must mean solely the study of literature and the exercises in grammar and rhetoric. It should certainly not include, excep in so far as these main purposes are served thereby, the exercise in reading aloud. This should be a distinct task, set for the purpose of cultivating the physical powers of enunciation and articulation ; and it is therefore treated elsewhere in this book.

It is to be feared that even a full allowance of three hours weekly is not always conceded to the school study of our native literature and language ; but there is no doubt of the growth of a public opinion tending to remove from us the reproach of this neglect. In many schools, indeed, already ample time is set aside, even if it is not in all such cases used so as to secure the largest profit.

One caution is necessary before we proceed to details. The plans which it is intended to propound here will presume that the literature lesson proper is one thing, and the lesson in grammar and rhetoric another. It may happen, of course, that preference or the pressure of school time may lead a teacher to adopt a modification. In the main lines, however, the method proposed has stood the test of experience and has been found both workable and useful.

The purposes of English literature teaching and the order of their importance

Let us consider the main purposes that we have in view in placing English literature, as such, in our curriculum ; and let us agree, if possible, on the order of their respective claims. We shall find, having done this, that we are well on our way to settle questions of sequence and method in actual class-work.

We expect the study of literature to put our pupils into intimate relations with high ideals and examples of conduct,

to give them a taste for the most refined and purest intellectual pleasures, and to send them away with some knowledge of the form and matter of the highest achievements of thought. It should also help them to use their own language effectively.

The ETHICAL purpose and the first stage

As to the paramount importance of the first of these objects there can be no doubt, and it needs no Plato to demonstrate that what we know best we like best. On the other hand, there may be considerable differences of opinion when we come to interpret the principle and to translate it into practice. It has been understood to mean that we should place before pupils nothing but pictures of perfect virtue and portentous goodness. But these are monstrous and unconvincing, nor are they, after a very early stage of development, even interesting. No one really believes in them; and even the infant, to whose vision such broad splashes are pleasing enough, regards the figures as mere play-acting personages, and is less affected by them than are grown-up people by the creatures in a play of Mrs. Centlivre. But we may from a very early stage test our material by an adaptation of a sound Aristotelian standard. Prefer a noble, a large, a heroic subject; and let emotions be purified by pity and fear associated with objects that deserve them. The type of literary subject fit for the young pupil is the epic or heroic poem, a sweeping pageant of wise kings and brave heroes; the type best suited to the needs of the older student is the tragedy, the story-in-action of the noble personage brought low by some defect of character; but noble still. In all cases the pupil's heart should be warmed to admiration. We may begin with Chevy Chase, and hope that he may feel something of what Sir Philip Sidney felt when he said 'I never heard the old story of Percie and Douglas that I found not my heart moved more than a trumpet'; and we shall come by natural stages of appreciation to Lear and Hamlet.

Its pictorial setting. Romance and adventure

Everyone knows what fascination for young people lies in the literature of romance and adventure. This is the earliest and most abiding taste of youth, suggesting and colouring play long before play begins to be organised into games. The very young child, to be sure, is interested in action alone, without regard to its ethical character; but as stories and tales begin to be compared with the ethical judgments of those about him, sentiment grows; he, too, discriminates between virtue and vice, desert and demerit; though he will be naturally attracted, on the whole, to those characters

with which he is taught to sympathise by the order and conditions in which he hears about them. It is a fact that we form predilections and preferences for those things and persons of which we hear earliest. The feeling must be familiar to every reader of novels. We may use this tendency to the very great profit of our pupils if we fill up the first space available in their imaginations with noble figures at the earliest possible opportunity. This obsession or preoccupation will discharge in the body of literary preferences the function which the bacteriologists tell us is performed in the human body by the 'phagocytes.' They will meet and devour inimical and unwholesome microbes on their first appearance.

The fairy story

The natural foundation for the literature of adventure and romance is of course the fairy story. This is not the place to discuss at any length the propriety of the fairy story in the education of children, for we are to assume that we receive our pupils in the secondary school after they have passed the stage in which this is ordinarily their sole or chief literary food. A word, however, must be said on the question, for a like psychological propriety governs educational practice in both the earliest and the latest stages. Some writers on education dislike the use of fairy stories under any circumstances, but most are even more emphatic in approval; and it is to be hoped that the voice of the majority is the voice of right reason. At all events, custom and long tradition have decided for us; and we must content ourselves with the reflection that however imperfect and even harmful they may appear to devisers of finely elaborated theories and subtly articulated systems of education, they satisfy the legitimate interest of the young in rapid action and vigorous actors.

On such reading or story-hearing follow naturally the 'Odyssey' or tales taken from it; the 'Holy War'; Macaulay's 'Lays'; Kingsley's 'Heroes,' and the like. How these are to be used we shall see hereafter; at present we are concerned solely with their character as subject-matter. They will not impose on our pupils as true in any sense that is of importance to us. Like the fairy stories in the preliminary stage, they will serve in the main as food for the imagination. Children may *act* them, but they will not act *upon* them; they will not accept the incidents as part of their effectual belief. They will imagine, to be sure, grotesque worlds full of admirable and interesting personages, to whom strange things might have happened. So much the better; this largeness of

imagination is one of the possessions that distinguish the better-nurtured child from others less fortunate. It is an early step towards the acquisition of the blessed power of escape from the pressing and, if untouched by the light of higher purposes, the sordid little things that for most people make up life. It is the power of re-creating one's universe. At this stage the child is passing from the pleasure of aimless play, which is the spontaneous activity of childhood, to the pleasure of romance, which is the more deliberately sought relaxation of later age.

We need not, on the other hand, in our choice of matter neglect historical narrative in even the earliest literature teaching.

Historical narrative

It may, indeed, be very useful for the purpose of bringing home to the young pupil the reality of literature, though even for this a narrative of contemporary events, real or imaginary, would be better. We may, however, assume that this intellectual need will be provided for by the history lesson proper. The one quality that is essential to all narrative, fictitious or historical, of ancient doings or of modern, when used for literature teaching in the early years of school, is that the figures should be large and imposing.

We are met in these early years by a set of questions which recur, with differences, all through the English course. The first

The use of archaic material

is to determine what degree of archaism renders our material unfit for school purposes; and its solution depends on what view we take of the amount of time we can, as a matter of organisation, and should, as a matter of pedagogy, bestow on the explanation of textual difficulties. It is obvious, however, that as a pupil's experience and reading grow, and with these his vocabulary, strange phrases and words will make diminishing demands on the master's attention, at least in so far as light may be needed on the meaning of the text. In the earliest stage it is clear that explanations should be made as rapidly as possible and intended merely to help the pupil to pass over the text with as little break in the general interest as possible. Even 'Chevy Chace,' though 'evil apparelled in the dust and cobweb of an uncivil age,' need not offer irresistible philological temptation to the teacher of small boys. The 'Robin Hood' ballads of course lend themselves more easily to rapid treatment; so too such suitable poems as Leigh Hunt's 'Jaffár' and Macaulay's 'Lays.' The general interest is all-important.

It may be admitted at once that the matter used at the earliest stage is on the whole best suited for teaching when simplest and

most familiar in form; when explanation is least needed, when the warm interest inspired by the story never cools under showers of something that suggests the old-fashioned formal grammar. We shall see still better reason for the great claims of continuousness of interest, that is of enjoyment, at a point in the later stages where it is of even greater moment in producing the most profitable mental effect. It must suffice to insist on it here if only because any excessive propounding of linguistic puzzles that necessitate considerable demands on the memory of young pupils will make them regard the literature lesson as tedious, and will sow the seeds of defeat and disaster in all subsequent stages.

Material should be simple and copious

Again, not only should the matter at this stage be fairly simple in form and treated with much less analytical grammar than fits a later stage; there should also be plenty of it. The class should be accustomed to work through a large piece, and preferably, of course, a complete poem or episode, at one sitting. This, to be sure, depends to a large degree on the readiness of the teacher to be content with rapid and simple explanation. It assuredly helps to cultivate what he should value most, a comprehension of and therefore a taste and liking for the work. Some sacrifices should be made, if necessary, so as to avoid breaking off in the midst of an episode or passage which is truncated for the purpose of the lesson. The revived interest, if it ever comes to life again at all, is not the same as it was when the whole connected series of ideas and associations first presented themselves; and the habit of regarding literature as a *corpus vile* which is to be laid out at pleasure in amorphous fragments for purposes of dissection is sure, unless special care is taken, to be acquired by all but those pupils, a small minority, who are born with the literary sense and the kind of memory that instinctively reject indigestible and unassimilable elements.

It is to be noted that in recommending the use of the older English classics, and poetry of the least degree of difficulty, too, in the early stage, we are at variance with some authorities who have warmly, but happily in vain, condemned both practices. We may admit, and we have agreed, that for such a stage the simpler authors are the best; but no proof is necessary to convince most people that a book may be very old—the authorised versions of the Hebrew and Greek scriptures, for instance—and yet unapproachably simple and direct. We have to ask ourselves merely what

Objections to the early use of archaic and poetic material

kind of simplicity it is that we desire. Moreover, it is an immense mental and even a spiritual gain, and therefore worth some sacrifice, to be able to give young people even the faintest sense of the original form and essential continuity of the language which is theirs as it was Sir Walter Raleigh's and even Henry the Sixth's. It is precisely the lack of such a historical atmosphere that in the ill-educated person kills the historical sense, starves the imagination, blunts the perception, and so produces, or helps to produce, the intellectual vulgarity 'which is a form of death.'

Nor is this sufficiently answered by the plea that we are to think of 'improving our own composition.' For we have at the outset assumed the ethical purpose of the school literature lesson, whatever its form, to have the first claim on us. Moreover, the appropriate rhetorical exercise of this stage, appropriate because most natural, is not the critical examination of an author, but the provision of material for thought and imagination; that is, ample practice in telling the story, in discussion of the personages and their doings. The young pupil lacks principally ideas and words. These suggest one another, and we must make the acquisition of them easy first of all by a course of reading as copious as we can compass and then by simple discussion and reproduction.

The use of modern matter

It is not only highly desirable that the young pupil should be supplied with modern as well as older matter; he should also be taught the value as literature of contemporary writings of high character. There are two good reasons for this. The first is that by alternating the familiar modern matter with the stranger and older classics, we give breadth to the pupil's horizon. Limitation to the one or to the other sort exclusively must needs result in narrowness and even imperfect appreciation, inasmuch as comparison is an indispensable aid in this as in other studies. The second error that we escape by the inclusion of the modern author of repute and standing is the dissociation of literature, and fine literature, from the pupil's sense of the life that goes on around him, in this his world. It matters little perhaps in the first school stage, but it matters much in the second and third that boys and girls should be taught to find their pleasure in classics of their own day, in 'Lorna Doone' and 'Treasure Island.' They will else tend to regard classics with merited suspicion, as books associated solely with study and constraint and drill; and they will prefer to read any of the exciting weekly papers that provide house-maid novels rather than books whose interest and beauty are immortal. They must

be made to feel that the qualities that give their rank to both ancient and modern classics are common to both.

It may not be possible to get through all the material here implied in the ordinary way of form work. But as books to be read during the holidays and discussed in form during the working term, a good deal of very valuable ground might be covered without effort. This can, of course, be effected with a modern book where the more archaic book would be inadmissible; whilst holiday work of this character is undoubtedly more certain to receive attention at the hands of the boy to whom it is prescribed than the half hundred sums which he is enjoined to 'do,' and 'does' vicariously—through obliging members of his family. 'Chevy Chace' might be taken in form after several of Macaulay's 'Lays' had been read during vacation; Raleigh's 'Discovery of the Large, Beautiful, and Rich Empire of Guiana' might in the same way follow the private reading of Prescott's enchanting 'Conquest of Peru' or 'Conquest of Mexico.'

Modern English literature as holiday exercise

As for poetry, ancient or modern, we should have it from the first. The neglect to use it in the early stages would deprive us of several marked advantages, if only because verse remains more easily than prose in the memory, by reason both of its mechanical effects and of its superior power of stimulating the imagination.

The early use of poetry

But it does more than this; it also permits the judicious teacher to sow the first seeds of interest in literary form. Take for instance:

> I sprang to the stirrup, and Joris, and he;
> I gallop'd, Dirck gallop'd, we gallop'd all three. . . .

Whether this is taken in a reading-lesson or as a more formal study of the text, the teacher could hardly fail to get his pupils to notice first of all that the lines have an equal number of stresses, then that the stresses in each line recur at regular intervals, then that the effect on the ear is to suggest rapidity of movement, then movement of a certain recognisable kind, for the line itself 'gallops.' Hence several valuable definitions, to be made by the boys themselves, and, above all, the inference that in verse there is a connexion, in this case a very obvious connexion, between sound and meaning—a conclusion which a small boy would ordinarily reach, if left to himself, either not at all or only after a long experience of reading. And in the meantime he would have lost not only knowledge but a great deal of pleasure.

Truly, the amount of prosody taught at this stage might be exceedingly small; we should else defeat our main intention of leaving the chief impression to be made on our pupil's mind by the story, the plot. The like holds true of the seeds of other parts of literary study. If we are careful to remember that the pictorial and ethical impressions are to be safeguarded before any others, we may discreetly suggest the interest that lies in analysis of character, in rhetoric or the careful study of figures of speech and their effects, in philology, and so on.

Procedure in class

From what has been said, it may well be inferred that we must begin by reading our poem or passage through in order to get a general idea of it, passing very lightly over textual difficulties, and explaining only such points as might otherwise become stones of offence. Whether this should be done by a member of the class or by the teacher must be determined by the character of the text. Cowper's 'Boadicea,' for instance, might well be left to the reading of an intelligent boy. To have read the whole passage oneself gives a pleasant sense of possession and is an incentive to curiosity. The teacher naturally follows with suggestions as to the right reading of misread passages, and, if necessary, reads the whole again. He would next ask for an oral account of the passage, but not a paraphrase of each section. What purpose had the author in writing it? What lesson does it teach? What idea does it give you of the character of the queen? What have you read about her elsewhere? What other sovereign is known to have addressed an army about to fight an invader? What do we call the spirit that inspires us with love of country and the desire to protect it? Before our next lesson you shall write out for me, in the form of a story, what the poem tells us in verse.

For the earliest stage of school life this is enough. A little later, and allowing for the necessity of covering a good deal of ground, the teacher may take such a passage, after it is generally understood and remembered, and deal with it more in detail. He will divide the poem or prose passage into sections which he has previously determined to be self-contained, and call upon the form to examine them carefully, asking for explanations here and comments there. These again may be subsequently, at the teacher's discretion, further subdivided for comment and conversation on more minute points. For instance, some part of one lesson may be profitably constructed of topics arising from the 'counsel' sought of the 'country's gods.' In subsequent lessons separate

words may be considered and practice given in exacter paraphrase. This, however, should be done but sparingly. It should be contrived solely in order to cultivate accuracy, to correct slovenliness and vagueness of comprehension, and only where there is any real danger of misconceiving the text. We should else run the risk of creating the general notion that one form of expression may be exactly rendered by some others, probably quite as good or better; and that poetry, in particular, is another form of prose.

Paraphrase

Paraphrase may be more freely used at a later stage as a preliminary to minuter rhetorical analysis, for the purpose of disengaging the various figures of speech, of discriminating the styles severally appropriate to different purposes, and of dealing with analytical processes for which our youngest pupils cannot be, from the hypothesis of age, yet ready. Here we are to remember that our pupil lacks first of all matter; it is matter therefore that we are to give him, and our teaching will pass from the clear outline to the clear details; we can with safety examine the 'parts' only after we have acquired 'wholes' to work upon.

It is in this form, probably, that we should be inclined to adopt the suggestion made by the sub-committee on English appointed by the National Committee of Ten in America, who say that from the beginning of the third year at school (that is, when he is thirteen years old), the pupil should be required to supplement his regular reading-book with 'matter of a distinctly literary kind.' The view that we have adopted requires Reading, as a means of cultivating the arts of articulation and enunciation, to be treated separately altogether, and supposes the 'reading-lesson,' when used for 'English' purposes, to serve distinctly literary ends and to use distinctly 'literary' matter as soon as the child leaves the preparatory school, and even earlier. It is certainly desirable to resist the temptation, under whatever form it may come, to treat our matter as if its general character as literature were of less importance than the fitness of its parts for rhetorical analysis. If we do not think it important to be fastidious in our choice, and if our study is directed to matter that is commonplace and, in a literary sense, insignificant, we might derive hardly more profit from it than from a study of rhetoric pure and simple as prescribed in hand-books rich in examples. We might even decline on the daily newspapers, as the compilers of school 'readers' are said to do, for these would provide an ample supply of most of the figures of speech, and copious instances of their use, both proper and improper.

By passing through such a course as has been outlined, even at the end of their twelfth year our pupils should have made a distinct step towards the possession of some literary sense; they should certainly have been put in the way to form a healthy taste. But at best this stage is merely preliminary. On those who stay longer at school, as we presume the pupil of the secondary school to do, the English literature lesson is capable of conferring a larger proportionate profit in the years that come later. For as the boy grows in experience, so too his vocabulary and his range of ideas increase; and now the compendious lesson becomes a more than ever valuable instrument of education.

The middle stage must be both self-contained and preparatory

The scope of our inquiry binds us to give special consideration to the cases of those pupils in secondary school training who leave school at sixteen or thereabouts. From thirteen to sixteen, then, forms a convenient second stage; it can at the same time be made, in a certain limited sense, both complete in itself, and also duly preparatory to the larger training that should be given to pupils who stay still longer.

It has been laid down by practical experts that all courses of instruction should be the same in each stage for all pupils whatever their destination. If this is true at all, as may be conceded, it is surely and most unmistakably true in the teaching of English literature, so far, certainly, as English literature can be made a subject of school instruction. It cannot, happily, be made a 'technical' study; it cannot be shown to contribute directly to the productive efficiency of a youth as an earner of bread. It need not therefore be manipulated so as to produce the sort of results that can be checked wholesale and so tabulated. We use it to cultivate mental habits and tastes, not to facilitate automatic processes.

The middle and the last stages of school instruction in English literature have very much in common; and if we are to make the best possible use of the middle period, supposing that it may be the last which a boy will spend *in statu pupillari*, we must satisfy ourselves whether we can proceed by leaving out matter and topics in the one that can be with less propriety sacrificed in the other. It will no doubt be found hard to lay down any general rule by which we can be guided under all and any circumstances. But the ordinary boy of sixteen has usually more points of connexion with his comrade of fourteen than with the boy who for good reason, stays at school until he is nineteen. For the

middle stage, then, we should prescribe courses not greatly differing at first from the heroic and ballad verse and romantic prose material of the early stage, but developing gradually; in verse, into the more elevated styles, into lyrics, descriptive poetry, and the easier dramas; and, in prose, into the easier essays, into oratory, and into the statelier histories.

What, then, do we leave out, generally speaking, as unfitted for this period of study but appropriate enough for a stage later? In the latter there seems to be no reason why we should not initiate pupils into any of the highest branches of the studies in which they are engaged. If they are proceeding to a university, we assume that there they will be able and will be encouraged to continue their work in a philosophical spirit. If they are not destined to pursue some academic course, or even if, in a university, their energies are diverted elsewhither, we are all the more bound to use the training in English in order to develop taste and general critical power and to give some knowledge of the native literature. There is therefore no branch of general literary study on which in the last school stage we might not profitably bestow some attention; we have merely to determine which of the tools that we are ready to place in their hands will be most useful to our pupils hereafter. Of all possible studies this constitutes the peculiar 'technical' training inalienable and inseparable from the nature of the school, and not less so in the highest form than in the lowest. Under no circumstances is it conceivable that in any school not of the barest technical type it would be desirable to permit the absence of any pupil from the lesson in English literature. Nor is there any book of classical character, whether it be drama, oratory, philosophy, or history, which may not be used in the last school years, at all events; the selection and treatment always of course being determined by the general intellectual level of the class.

In the middle stage more regard is paid to the ÆSTHETICAL purpose, excluding subtler and minuter criticism

But from the middle stage we naturally exclude the subtler dramas, which are obviously better suited for the latest stage, and also the more archaic prose, for reasons already set forth. And though it is desirable to let your class acquire some general notions of the relation of the book studied to other books by the same author and books written by contemporaries, they must be jealously guarded against the hand-book information which older pupils of larger reading are less likely to mistake for literature itself.

This is the stage at which the class can be led to recognise the great divisions of literature. They are to know lyric and heroic

and dramatic poetry when they see it, or, at all events, they are to know these different methods of treating poetic subjects; and they are to begin to detect some of the arts and artifices of the great writers of prose.

Sydney Smith was of opinion that we ought to introduce our pupils to authors in order of chronology, to Spenser first, then Dryden, then Pope. The same view has been formally recorded by later writers of more expert authority. Courses have been devised, and series have been edited with all due apparatus, on these lines. Now the first stage of a young pupil's English studies as we have imagined it would certainly not permit this plan. Having few words and few ideas, his main work would be rendered doubly difficult; he would have to translate the archaic unfamiliar into a current vocabulary already exiguous enough for the purposes of every day. At the same time we have urged that traditional matter should be used as soon as possible, and even that the entire exclusion of archaic forms and phrases is most undesirable.

Presentment in chronological order of composition inadmissible

But of course our objections are attenuated as we deal with boys and girls who have a larger vocabulary. At the age of thirteen or fourteen a pupil might well profit by a series made perhaps somewhat as follows: Shakspeare's 'Tempest,' Milton's shorter poems, or some of them, 'The Pilgrim's Progress,' 'Robinson Crusoe,' Addison's Essays, Pope's Essays, 'Esmond,' Tennyson's 'Idylls,' and 'Lorna Doone.' A hundred better courses might be devised, courses that might illustrate in progressive idiom progressing states of society and consecutive historical events. On the other hand, the most careful grading will still leave the textual difficulties and unfamiliar forms of word and phrase thickest and most perplexing at the beginning of the pupil's studies, where they would give most trouble and be most out of proportion. Now quite apart from the excessive expenditure of time thus made necessary, it would seem that this order is preposterous for another very important reason. It will probably be agreed that it is vital to our first and main purpose that we should from the outset associate literature with the forms of life and the institutions that are familiar to our pupils; and this cannot be done if we tie ourselves ever so lightly to this chronological method of presentation. The error is another form of the time-dishonoured mistake that endeavours to lead first principles up to children instead of leading the children to first principles. Besides, we have supposed that our pupils should feel the charm of con-

temporary classics as soon as may be, and not be driven for romance and interest to the Daily This or the Weekly That. It would be impossible to effect this if we make English books appear to be chiefly material for rather hard 'lessons.'

A ludicrous proof of the ill effects of the too preponderating use of the statelier older classics is seen in some forms of what is known as 'Baboo' English. It is not surprising that after a long study of Milton, Shakspeare, and Bacon, to the exclusion of contemporary classics, the educated Hindoo often finds himself using an idiom which in his mouth must needs be stilted and antiquated. If the chief aim set before such students of English were a mastery of modern idiom and style, one would think that they should be practised or 'soaked' in modern authors until they were at least at the stage represented by the average English-born boy of sixteen or seventeen. As it is, they are set to prepare Bacon's 'Essays' for examination—with a careful translation of them into modern English by way of key. Could a greater waste of effort be conceived?

The English boy of course stands on a different footing, though the principle involved is the same. If he hears nothing of quite modern English classics in school, and is without the aptitude and incentives of the Hindoo student, he leaves with a sense of the unreality and toilsomeness of literature rather than of its deep meaning and its recreative quality—and he will not acquire, like the Hindoo, a learned vocabulary. He will merely be content with his ordinary sources of supply.

It is unreasonable, then, to teach English literature in idiom progressing from difficult to easy, even if it be possible. But it is less absurd to follow the injunctions of the theorists who would have our course of literature represent progressive states of society. Such a sequence might be constructed of 'Sohrab and Rustum,' Pope's 'Homer,' Tennyson's 'Idylls,' certain of Shakspeare's historical plays, various books of Defoe, 'Pilgrim's Progress,' 'Gulliver's Travels,' and 'Waverley.' On the other hand, the advantages to be gained by such a series are very doubtful, the demerits and difficulties manifest. It is harder for a boy to imagine a remote state of society than a later one. The process is eliminatory. He could not arrive at his historical notions in careful succession unless his mind were indeed placed in our power a *tabula rasa* and free therefore from all current and past associations. His experience is, under the most rigidly contrived circum-

Presentment as progressive illustrations of social development less objectionable

stances, so confused that much of his school instruction necessarily resembles the task of arranging a pack of cards which have been previously shuffled. In the matter of history, this task of arrangement is the business of the history lesson properly so called; the scope of the literature lesson is wider. We must use it, in Mr. John Morley's words, as 'the proper instrument for a systematic training of the imagination and sympathies, and of a genial and varied moral sensibility;' and this complex operation must depend on the development of mental capacity and powers of appreciation, not on the succession in time of past events which offer difficulties of conception to the growing mind, increasing as we work back to primitive stages.

Experienced teachers, however, of the highest authority seem to be agreed on the desirability of studying 'in connexion' always, and not a few distinguished writers who have not been school-masters might be quoted to the same effect. How are we, then, to determine the principle of homogeneity on which our books are to be chosen? Unhappily, in this as in other directions, we are liable to the inexpert prescriptions of examining boards composed often enough in great part of accomplished persons who have not taught boys or girls, and who therefore cannot help preferring the books that will provide a good 'paper.' But let us assume that the teacher has full power to plot out his course for himself. We have seen that the historical sequence, if feasible, is open to serious objections. Is there any other line that we can follow with profit?

Some principle of connexion is desirable to secure opportunities for comparison and contrast

The simplest and most obvious device would seem to be to study two or more works of the same writer composed in similar literary form. Two tragedies or two comedies of Shakspeare are better for almost every purpose than one; so are two speeches of Burke, two of Pope's essays, and so on. In these and the like cases points of comparison and contrast offer themselves readily. We get a little further when we use similar works of different writers; a play of Shakspeare and of Marlowe; a poem of Pope and a poem of Dryden; a speech of Burke and a speech of John Bright; essays of Addison and essays of Lamb; and the like. No ascending scale of differences or similarities in relation to fitness for various stages of school study can be laid down with any exactness; according to treatment, two very similar comedies of Shakspeare or forms of composition as widely different as 'Hamlet' and 'In Memoriam' could be made to serve an intelligible plan of instruction when studied side by side under the

direction of a skilful teacher. Everything depends ultimately on the elements selected by the teacher for joint consideration.

A sense of style, however, may generally be best acquired by using works of similar form by writers of different periods, as one might use Bacon and Addison for essays, Milton and Tennyson for elegies; Milton and Keats for certain minor forms of poetry; Gibbon and Macaulay for historical prose. Teachers have been urged by a school-master of great eminence to 'soak' their pupils in the work of one author rather than in the selected works of different authors, as the old Greeks were 'soaked' in Homer and the Romans for many a year in Vergil. Clearly this plan has much to recommend it, if only its thoroughness. But consider how much more ground we have to cover than the Greeks and Romans, and consider the shortness of the time at our disposal. Let it be freely admitted that anthologies, excerpts, and specimens make poor literary training for all but the compilers; that they are confusing, distracting, leaving no general impression which is at once large and well defined. All this is true enough, but school life is brief, and the list of great writers of whom every English youth should know something at first hand is long. Styles are many, and a knowledge of the mere forms of literary composition is the necessary skeleton of a knowledge of literature. Except in the hands of a consummate—it might almost be said an inspired—teacher, the exclusive use of a single author, however copious, gives a certain narrowness and stiffness to the training and to the exercises that would be naturally based on the matter read. We shall probably go safest in the middle of the stream, avoiding the 'snippets' on the one hand and exclusive and lengthy devotion to a single author on the other. We can have substantial and impressive wholeness without sacrificing the advantages to be got by comparison and contrast.

We should still continue to relegate to its due place of subordination any very careful study of an author's imperfect grammar; his archaic words and phrases will not detain us long; and there should not be much *talk* about style till quite the end of the middle period. Unless these precautions are taken, your pupils will be overwhelmed with details which are, after all, of little concern; they will not see the wood for the gnarls and knots on the branches of the trees. But between the ages of twelve and sixteen their diet should be well varied. In addition to the reading of heroic verse, they should be introduced to the historical novel and novel of unfamiliar manners. In the latter

Practical exercises in the middle stage

part of the period they are to make acquaintance with the easier dramas of Shakspeare. They should begin to read and even imitate the ingenious verse of the eighteenth century, a particularly good exercise for the cultivation of pointed and economical expression. They should be drilled in the ways of the more rhetorical prose writers whose arts, like Macaulay's, are not too difficult to detect, and, on a scale appropriate, to apply. But the imitation of prose writers must be practised only rarely and with great caution. For English is the language that our boys and girls speak, and we wish them to speak with their own tongues. They are not to strive to speak or write like some one else, however great, acute, or eloquent. They have to learn rather to say what they mean in as brief a form as will be understood and will produce the effect that they desire. The imitation of verse is quite another thing, except in so far as it may check the growth of a budding poet—a contingency too unlikely to be taken into account. Not the least of its advantages is that it makes pupils alert and appreciative in the discovery of the fine workmanship of the consummate verse artists.

This, too, is the time when the general conversation about the author and his work may well culminate in an essay to be constructed outside the class-room, and of materials accumulated round the book studied. And since at this stage we are doing our best to make the pupil understand that for profitable discussion we must have plenty of material to compare and contrast, we must be careful to require essays on definite and well-understood topics, not purely general in character, not suggesting strings of insincere platitudes, nor inviting the pupil to handle themes entirely outside his experience. It will serve no good purpose in any degree to require him to discuss the Rabelaisian question 'whether a chimera bombinant in a vacuum is capable of devouring second intentions.'

The third stage and the CRITICAL purpose. Annotations and examination papers

By the time the pupil has reached the end of his second stage, he will have amassed the material for a more careful study of style in his next. He will have read specimens of the finest English work in most styles, though not the most subtle and complex, and he will know something of the chief of them. Even if he has now to leave school, he should carry with him an intelligent knowledge of the real outlines of English literature, not in the form of names and statistics and tables, but in a fairly intimate acquaintance with some of the greatest books of the greatest writers. He should also have a

fair command of the apparatus of criticism, that is, the means of testing quality and discriminating style.

When we come to the third stage of school life, from sixteen years and onward, we are in the region over which lie too plainly the trails of the annotated edition and the external examining board. It must be regretfully admitted that these two (singularly English) influences have contributed much less than might have been hoped to an extension of the real knowledge of English literature, however much they may have helped to bring English authors into use as means of mental discipline heretofore supplied by the study of authors who wrote in Greece and Italy. Immense efforts have been spent on both lines of activity; books are generally edited with admirable thoroughness by eminent scholars, and conspicuously, of late years, in the United States of America; papers of questions are generally most ingeniously constructed to test the minutest knowledge and to confound pretentious ignorance under all forms. But every teacher of English literature must have felt that his pupils are, by the one means, overburdened with baggage and obstructed in their progress through kindly meant but truly officious assistance, and, by the other, either sent off in the wrong direction or else sorely discouraged. The most enthusiastic teachers, indeed, whose special gifts of character help them to inspire their pupils whatever the subject of study or exposition, may succeed where most of us fail. At best we work painfully against crowds of floating matter, confusing and distracting to the average boy or girl, to whom the stream should be growing ever more friendly and familiar.

The *general* view, which is the important view, is the last, instead of the first, which our annotations and most of our examination papers permit the boy or girl to take. We have been grievously misled by the analogy of the study of the Greek and Latin classics. Of course we cannot expect our pupils to get their clear general impression of the 'Antigone' or the 'Æneid' until they have mastered by letter, word, line, paragraph what Sophocles and Vergil wrote. For none but the finished scholar is there any road here but the road of minutest verbal and logical scrutiny, scrutiny as logical and painstaking as is required in the study of any physical or mathematical sciences, and very much more than is usually bestowed on them as we see them taught.

Misleading analogies of Latin and Greek studies

But on what grounds are we to justify the practice which in the study of a great English book by English boys or girls begins

with a philological, geographical, historical, or otherwise exclusive examination of and excursus on the first word of the first line? If we wish to 'take in' a picture in its entirety and general outline, we do not postpone our view of the whole till we have begun at the top left-hand corner and exhausted all that can be said of the fragment, the pigment, the stroke, or the line with which it has been produced. That procedure would be the right one only if we could by no other means secure the general *conspectus*. It is unhappily true that many a young pupil puts away his play of Shakspeare, after school-study of many weeks, with the vaguest sense of the story as a whole and no real sense of its beauty and power; and if this is the case with a drama, where the action supplies an unbroken clue, what is the general effect of 'Il Penseroso' or the first book of the 'Faery Queen' approached and completed in this fashion?

The most experienced teachers are therefore right in telling us that we should begin almost always and in all grades with a continuous reading and general outline of the book or passage set for study; that we should at the first reading explain words and phrases and disentangle *anacoloutha* so rapidly as not to break the line of general apprehension; that our 'æsthetic' criticism should be the first stroke of our work of commentary because it covers the largest area; that philology, geography, history, and the rest come latest, and should be treated, if possible, in order of highest generality, so that if there is too little time to master every point of profitable knowledge, the minutest should be left out.

Now the annotator cannot see to this. Paper and print condemn him to deal with his word, phrase, line, or paragraph as it emerges. But the examiner can (and more rarely does) encourage the larger in place of the minuter and more distracting lines of investigation; he, at all events, is not bound to dwell on all or any unfamiliar or uncommon point. But the evil against which we struggle here is a frequent result of our native systems of examination, which in every branch of study promote a minute knowledge *about a book or books* to the disadvantage of the more fruitful and stimulating study *of a subject*. The practice is surely a breach of the very first injunction of criticism as translated for application at the hands of the school-master. We are told that we should try to see the work of art as it really is. But the artist did not conceive his edifice in disparate bricks. It is what it is because he conceived it as a whole, and to this, the author's, point of view we must strive

The first injunction of criticism translated for school use

to bring our pupils. This is what Bacon might have called his 'theatre;' some sight of it is the first condition of even the faintest real comprehension and enjoyment. With this, our pupil is set on the way to see the real thing; he has also a possession for ever, for he will surely remember the whole author better and more willingly than he can his *disjecta membra*. On this point Professor Bain's opinion will probably carry conviction to most people. He says: 'I by no means regard as useless the many excellent annotated editions of portions of our classic authors—Shakesperian plays and so forth. I think, however, that their value is not in the schoolroom, but in the stage immediately following—the beginning of self-culture. In fact, they are most useful to readers of mature age. I have seldom had a greater treat than in perusing the annotations in Pattison's "Pope," including the "Essay on Man" and the "Epistles." But I do not regard either of these as schoolroom works. They are not exclusively addressed to the pupils of the English class, and I cannot point to any other class in our school system where they could come in suitably. They are a mixture of literary criticism, philosophy, ethics, and religion, which I do not object to in my miscellaneous reading, but should decidedly object to in the instruction of a class.'

What, then, are we to do with our elaborately edited text-books, for the learning and industry of which it is impossible to have too warm an admiration? It would in all probability profit as most, even for purposes of examination, if we discarded them altogether. The master would then be free to give whatever sets of explanations suited his general purpose, education or examination, and in whatever order fell in with his plan—probably æsthetic and ethical first, philological and textual in the second or third reading. If, on the other hand, he feels safer for various reasons in proceeding with an annotated text in the hands of each pupil, and expects his form to prepare a given section out of school, then he does well to indicate what *points*, not what *notes*, deserve attention. It must never be forgotten that it is the text and not the notes that the pupil is to study. And in all cases, without exception, it will be found desirable to read the whole passage through before dealing with details.

Libraries

It would be impossible to close this chapter without noting the immense help given to the study of English by a properly constituted school-library. The ordinary English household spends, we are told, only a minute fraction of what it should on books worth reading and keeping to read; and we

cannot hope that the schoolboy has either the will or the power to amass for himself any proper apparatus for reference, or study, or wholesome 'browsing.' He is generally understood to dispose of his pocket-money in other ways, possibly equally important. In the study of English, however, of all studies, he should learn that he is mastering only a sample of the stores at his disposal; and a reasonable supply of books to which he can be referred to illustrate and verify the information acquired in class offers a very valuable means of intellectual discipline, particularly to the boy on the 'modern' side. The use of books of reference and of books illustrative of points of criticism discussed in the course of a lesson concerns the higher forms rather than the lower. The lower gain chiefly in having at command a copious supply of good matter to read at leisure.

There are several more or less useful manuals dealing with the teaching of English as Rhetoric and material for Composition, but English as Literature is treated mostly in *obiter dicta*, or in the form of introductions to books edited for school study. Professor Bain's 'On Teaching English' (Longmans, 1887) is very painstaking and thorough, but not so successful with Literature as with Rhetoric. I am the more bound to mention it here because I have elsewhere done it perhaps less than justice. Mr. Glazebrook in 'XIII Essays' (Percival) and Mr. Courthope Bowen 'On Teaching English' (Hodgson, 1881; Percival, 1891) record the valuable results of large knowledge and much first-hand experience in the class-room. Mr. John Morley, 'On the Study of Literature' (Macmillan, 1887), is inspiring and full of suggestions for school practice. To Dr. Abbott's precepts and example the cause of English teaching in England is supremely indebted. Teachers should consult particularly his 'Teaching of the English Language' (Hodgson, 1872) and 'English Lessons for English People' (Seeley). Mr. Gow's 'Method of English' (Macmillan) is well worth careful study, but mainly for its copious philological treatment of English. Mr. Hoffcut's 'English in Preparatory Schools' (Isbister) may be consulted for the earlier stages. Most of the volumes in Longman's English Classics contain valuable suggestions in detail by American teachers of eminence, who are chiefly concerned with the study of English as Literature. The Report of the American Committee of Ten, which contains arguments and conclusions which do not always accord with those appearing in this chapter, is full of valuable matter.

P. A. BARNETT.

MODERN HISTORY

THE friends and disciples of the late Professor Freeman will not, I hope, be repelled by the title of this Essay, nor suppose that I have any wish either to dispute the fruitful axiom that History is One, or to revive the very unfruitful controversy as to whether Modern History begins with the Call of Abraham or with the accession of Frederick the Great.

Conventional use of terms 'Ancient' and 'Modern'

The use of the terms here implies no heterodox theory; nor are 'Ancient' and 'Modern' even supposed to exhaust the contents of History. They merely indicate the two portions of History commonly read at school, the history of the Greeks and of the Roman Republic being known as 'Ancient,' and that of England as 'Modern.' They thus exclude Jewish and Oriental History on the one hand, and, on the other, the History of the Roman Empire, and also of the Continental and trans-Oceanic States, except so far as these branches of History are brought into intimate connexion with the subjects named above.

I can offer no theoretical defence of this arrangement. I should like to see the History of the Jews not only read, as it is, in the Bible, but carried down after the age of Nehemiah with the stream of Oriental History to the Christian Era; and the History of the Roman Empire continued to the barbarian conquests, and followed by the outlines of later European History. But with the time at present allotted at school a complete course of Historical study is not possible, and, if we are driven to select, the present selection is perhaps the best. A wise teacher will try to stimulate his pupils by opening an occasional vista into the unknown but not unknowable tracts of History that lie to right and left of the beaten road. Some day perhaps we may see a different place accorded to the study of History, and a larger extent of the field covered at school. Few experiments in Education would be more interesting than that of giving to History, at least in the higher

forms, a place not less important than that now occupied by one of the classical languages, confiding the teaching to men trained in Historical study, and making History the backbone of the higher education. But my business is not to outline an ideal, but to treat of things as they are; not to point out what might be done under other circumstances, but how the most may be made of the limited time now assigned to 'Modern' History.

Questionable arguments in favour of the study

At the outset I must say something about the advantage of giving History a place in school education, although some at least of the arguments put forward on its behalf I cannot seriously urge.

It is said, for example, that the study of English History prepares boys and girls to become intelligent and useful members of the State, by giving them a pride in its ancient institutions, by enabling them to realise the origin of the political and social problems of their own time, and by developing a healthy patriotic enthusiasm. But patriotic feeling may be stimulated by more direct methods; by isolated incidents, such as the relief of Lucknow, for example, more easily than by a continuous course of the History of British India. A good deal of what is found in the text-books of History has a connexion so remote with the problems of practical politics that an immature mind cannot perceive it, and can take no interest in it when it is pointed out. These political and social questions are not present to the minds of children, and the light that History throws upon them is no more interesting than the solution of a problem in arithmetic would be, supposing the problem itself unknown. 'Ancient Institutions' are just the part of History that boys and girls most dislike. 'What,' asked an American schoolmaster, according to Mark Twain, 'do you know of the Constitution of the United States?' and was answered, 'The Constitution of the United States is the small print at the end of the book, which nobody reads.'

The study must be justified by its method

Such place as History has gained in our schools is due not to any theory of its educational value, but to a vague feeling that 'boys and girls *ought to know something* of the history of their own country.' It is in deference to this sentiment that an hour or two hours a week have been conceded, that text-books have been bought, and lessons 'set' and 'learnt' and 'said;' and by these means the public conscience has been quieted. But if we had the opportunity of examining all our scholars a year after they have left school, we should find how very little we could justify our expenditure of

time and trouble by any knowledge of history or of political principles actually possessed by our former pupils. After such a lapse of time, supposing no intermediate study to have been made, we should find them probably better able than when they left school to translate a Latin or French book, but their small store of Historical knowledge would be found smaller than ever. And thus we are brought to the important conclusion that in order to justify our very limited study of History, we must show that the study itself, apart from the permanent acquirement, which may be little or nothing, has a really considerable intellectual value, a value different from that of those linguistic and mathematical studies at whose expense it has found its way into our time-tables.

If now we proceed to consider what History is, we shall reach the same conclusion—that it is by proving the value of the process of study, as much as or more than by showing the value of the knowledge acquired, that we must justify the study of History at School.

School history and historical science

History, in the highest sense of the word, is indeed no more a subject for school work than Therapeutics. 'School' History bears the same relation to Historical Science that a school course of animal physiology bears to the science of Surgery. History is the study of the development and organisation of the State, in all its varied forms; it is a training of the judgment in the weighing of evidence, in the study of character, in the verification of causes, and the tracing out of results. Here and there, in the highest forms of a school, may be found a boy or girl who, under good teaching, shows signs of an aptness for History, but the majority cannot attain to the right point of view during their school life. When we say of a boy that he is 'good at History,' we usually mean that he has a retentive memory. And this, though it is a most useful aid to the study of History, and indispensable to success under an examination system, will not carry its possessor far, unless it is combined with a power of grasping the significance and relations of facts and ideas, which is by no means always its accompaniment.

If, then, only among those who enjoy a prolonged school life, and among those only in a few cases, we find some progress made in History, we may well be asked whether it is worth while to teach History at all.

Is it worth doing?

We may answer, in the first place, that we are at least preparing some of our pupils to profit by the study at the Universities, when

their minds begin to open and enlarge, though we may not ourselves see the change come. We are giving them the raw material which will be woven hereafter into a fabric of knowledge with the help of other minds than ours.

But this is not a sufficient answer. It does not justify the teaching of History to the mass of our scholars, many of whom will leave school early, very few of whom will pursue the study at the University. If there is to be no superstructure, what is the use of foundations?[1]

The 'process' of learning must be valuable

I answer that the process of laying these foundations should have an intellectual value of its own, and that the foundations themselves have actually a certain worth even if no Historical superstructure be reared upon them.

A benevolent and speculative builder once essayed to span the valley that divided his native town, by a lofty bridge intended to carry a tramway. He failed in the undertaking for want of capital. But the arches of his unfinished bridge form a row of tolerable shops, and the experience he gained in erecting them was subsequently turned to profitable account in building a mill.

'History should be remembered

Now first let us consider what is learnt. All the things learnt at school may be placed in two categories—things that may be forgotten, and things that should be remembered. The categories are not absolute. An engineer must remember his Trigonometry, but a stockbroker may forget it. A scholar must remember the

grand old laws
That govern the Attic conditional clause,

but a member of Parliament need not. Allowing for the peculiar necessities of a few professions, it may be said that, for example, a grown man need not be able to prove that the angles formed by the base and the opposite produced sides of an isosceles triangle are equal to one another, but that he ought to know where to look on the map for Salamanca or South Carolina, and in what century Oliver Cromwell or Frederick the Great lived.

[1] One remembers Seeley's damning epigram, directed against teaching a little Greek to boys who are destined never to get within reach of Greek literature: 'If you cannot send your son to Cambridge, you do not send him part way to Cambridge—say to Royston or Bishop's Stortford.'

Now History belongs to the category of things that should not be forgotten. In politics, in literature, and in the ordinary intercourse of life, what I may call a schoolboy knowledge of History, a familiarity with its leading facts, is a useful equipment, and helps to make intelligible a good many things that would otherwise have no meaning. This immediate usefulness of historical facts was the justification of the old system of learning dates, 'Mangnall's Questions,' Memoria Technica, and rhymed mnemonics, such as

> Two thousand Abraham, fifteen hundred Moses,
> One thousand Solomon the record closes;

or

> Sweet Edward the Sixth was a Protestant youth,
> Upholding the doctrines of scriptural truth.

I recently asked a lady, who learned her dates thirty years ago on a system in which every figure was represented by a consonant, when Lycurgus founded the institutions of Sparta; and was answered as follows: '"Black Broth is Rank;' that is 884. And, if you want to know when Penny Postage was introduced, "This Has encouraged Much Scribbling," fixes the date as 1840.'

If it were our only object to get hold of facts, this, I venture to say, is not a bad way of doing it, as many elderly people can bear witness.

If we have discarded Mangnall and the poets, it is because there is something else to be considered besides the acquisition of facts; and that 'something' I take to be the intellectual discipline involved in acquiring them. There are men and women, trained on this old system, who knew more historical facts and dates at fifty years of age than are known by many men of five-and-twenty, who never heard of 'Mangnall.' We can only justify this state of things by showing that by our present method we do something for the mind as a whole, to compensate for the impoverished memory; and our method will not be really satisfactory until we

We aim at something besides

> lift each foot in turn,
> Left foot and right foot, go a double step,

strengthening the intellectual powers for the general service of life, but also storing the memory with some definite results of past labour inexpugnably possessed.

And thus we arrive at the conclusion we reached before. We must so teach History as to develop the intelligence, to quicken

the powers of attention and observation and reasoning; and we must not rest content unless we can also point to some definite store added to the treasures of memory.

And now let us consider some methods of teaching History which shall keep these two objects in view. I say 'some' methods, for I cannot pretend to exhaust the subject; and I am not writing for experienced and accomplished teachers, who may pursue and attain the same ends I have in view by ways much better than mine. What I want to do is to help those who are not experienced, by telling them what I have learnt from a whole series of failures and mistakes. I want to save them from some of these. If they begin where I leave off, they will in turn improve upon my methods, and so the standard of historical teaching will be raised. And this, and not the adoption of my method, is what I want.

Some methods

In the earliest stage History should be read or told to a child, or he should read it aloud. He should not be set down to learn it by himself. For this purpose there is still a book to be written. Most simple histories are too short. The best I know is Mr. S. R. Gardiner's 'Outlines.' But if, without increasing the difficulty of the style, or multiplying proper names, or adding to the number of events, the book could be expanded to twice or three times its length, and the most important episodes narrated more fully and picturesquely, it would supply a distinct want. One finds again and again that what boys and girls know best and most permanently in History, is what they learnt at this early stage; and I believe they might acquire rather more than they do if they had a suitable reading book.

The 'preparatory'

I pass from this stage, which belongs to home teaching, or to the earlier part of Preparatory School work, to the point at which children can read with some understanding, and must learn to prepare a lesson. It may be convenient to call this the 'Fourth Form' stage.

The 'Fourth Form' method

There are some who consider that from this point to the end of the chapter the matter is a very simple one. You have only to choose a 'suitable' text-book, set a lesson of 'reasonable' length to be read over, and question your pupils upon it, of course 'intelligently,' to find out if they have understood and can remember what they have read.

I will not dispute that this may be done with advantage, provided the teacher does not confine himself to testing the

memory, but adds some further information and illustration, and that this added matter is very carefully chosen so as to emphasise what is most worth remembering in the lesson.

Teaching by questions

But I think most beginners enormously under-estimate the difficulty of framing suitable questions. It is easy, of course, to test the memory; but questions that shall also teach the pupil to think, require very careful preparation. Three objects should be clearly kept in view in framing some leading questions: (1) to keep the various divisions of the lesson distinct; (2) not to take the subject matter point by point as it stands in the text-book; and (3) to present little problems or difficulties the solution of which may be found on discussion and reflection in some part of the lesson.

I think myself that the difficulty of giving a satisfactory lesson in this way, especially to a large form, is very great indeed. I admit that merely going over the lesson point by point in question and answer helps to fix it in the memory, that the attention may be stimulated by the teacher's narrations, that in proportion to his wisdom, self-restraint, and power of speech, some temporary or even permanent addition may be made to the knowledge of his pupils; but I think it needs very rare powers to maintain a line of thought in a large class through a series of questions and answers. The late Professor Seeley was a perfect master of this method of teaching, which he used with extraordinary skill in his Conversation Class. But even he would hardly have attempted it in a lecture room.

When first I began to teach history to a low form, I used to take the book into school and ask questions from the part set. I blush to record the fact that I did not prepare the lesson, knowing the subject pretty well, and feeling sure I could find plenty to talk about. So, no doubt, I did; but no doubt, also, I often talked about the less important things, and the results were obviously unsatisfactory. Morever, my pupils seemed to know very little about what they had read. They were not idle, but they did not seem to read with real attention.

To get better results there were obviously two ends to be aimed at: first, the boys must be taught to read with attention; and second, I must discover some way of going over the lesson that would not merely show me whether they remembered it, but would secure their interest, help them to think about it, and fasten it in their memories.

I will consider these points separately, and first the pupil's part of the difficulty.

There are few things better worth teaching a boy than how to read—to read with the mind alert and attentive, and bent upon understanding and grasping what is read. Nothing a boy can learn at school will serve him in after life better than this. To some minds it seems to come quite naturally, though it is often the result of having been read to a good deal in early childhood, and encouraged to talk over what has been read. But very many people never acquire it; because, not having the natural aptitude, they have never been taught. And here the History lesson has a value distinct from that of classics or mathematics. It gives us an opportunity of teaching this priceless art of reading a book.

Attentive reading

Now to stimulate attention I give every boy a little paper of questions on the lesson. A boy with a dozen questions before him reads with his mind as well as with his eyes. He has something to discover, and must put down a definite answer. If the questions are well chosen, his attention is directed to what is most important in every paragraph he reads. I will give a specimen. The lesson is Gardiner's 'Student's History of England,' vol. i. pp. 216–223.

Preparatory Questions

1. What claim of Edward's roused opposition in Scotland?

2. (*a*) How did the quarrel between Edward I. and Philip IV. originate? (*b*) What act of Philip's made war inevitable?

3. P. 218, l. 27, 'on two sides.' What does this mean?

4. What classes of members that sat in Parliament in 1295 do not sit there now?

5. (*a*) Edward's victory in 1296; (*b*) its results.

6. (*a*) Effect of the Bull '*Clericis Laicos*' in England; (*b*) how did the clergy evade it? (*c*) why were they driven to do so?

7. What demand did Bohun and Bigod refuse?

8. (*a*) What did the new articles of 1297 require? (*b*) When and by whom were they accepted? (*c*) How could the King still raise money without consent of Parliament?

9. Wallace's (*a*) first allies, (*b*) great victory, (*c*) defeat, (*d*) place of refuge, (*e*) death.

10. When was Edward able to settle his government of Scotland?

11. Could Edward, on his own principles, justify the annexation of Scotland?

These questions, it must be remembered, are given to stimulate

attention in reading the lesson. They are intended to aid the pupil in preparing the whole lesson, and not to confine his work to the selected points. The first business in form is to set seven to ten short *vivâ voce* questions which every boy answers on paper from memory—short questions, to be answered for the most part in a single word. After this we go once through the preparatory questions, the boys having each at least one chance of reading an answer, and being allowed to correct their mistakes. The marks given depend thus almost entirely on the *vivâ voce* questions, and this prevents the mere writing down of the answers to the preparatory questions being taken as a substitute for, and not merely as an aid to, study.

When this is done there remain forty or forty-five minutes for the teacher, and this brings us to the consideration of his share in the lesson. A good deal of material is already floating in the minds of the pupils, but it wants to be reflected on, to be arranged, to be made clear, and to be fixed in the memory.

Giving a lesson

Some years ago I was present at a lecture given by the late Reverend J. G. Wood. The subject was 'Sticklebacks.' Mr. Wood knew a great deal about Sticklebacks, and as he talked he drew—deliberately, line by line—drew, as I should have said, upon a black-board with coloured chalks, but really, as he was careful to explain, upon a 'prepared surface with coloured pastels.' Whatever the materials, he certainly drew very well, adding each detail as he explained its nature and function, and compelling the attention of three hundred people for an hour or more. I came away very much impressed. 'Most lectures on such a subject,' I remember thinking, 'it is hard to remember; this one it will be impossible to forget.'

I saw that I must teach myself to do something of the same kind; that if I could use the black-board and chalk as Mr. Wood used his 'prepared surface and pastels,' there would be no difficulty in retaining the interest of my form, and considerable chance of their remembering what they saw, especially if they were required to copy it. There was one serious difficulty in the way. Mr. Wood could draw it and I could not. But, as I could not get over this difficulty, I decided to ignore it. A bad drawing is as memorable as a good one, and it has even some advantages. If Mr. Wood drew a horse, everyone would know at once that it was a horse, and curiosity would be satisfied before it was half done. A four-legged animal by me has not this drawback. It may turn out to be an ox or a pig, just as likely as a horse. Attention is thus

kept on the stretch up to the last moment, when the horns, curly tail, or saddle and bridle, settle the point definitely. Besides, it is after all only occasionally that one need attempt a drawing, and my idea was to apply not so much the method as the principle of the lecture on Sticklebacks to the teaching of History. That principle of course is the appeal to the eye, an appeal made slowly, step by step.

Accordingly I prepare a careful note of what I intend to put on the black-board, in order to fix the lesson. But merely to write it down, or to have it thrown on the screen by a lantern, is of no use. Every step must be got out of the boys. They must suggest the phrases, fill up the gaps, explain obscure catchwords. The whole process of thought must be gone through by them. Any boy who sees the point may put up his hand, and I name the boy who is to answer. Marking is not to be thought of.

Black-board work

Here is the abstract of the lesson on which I have already given the questions. I have italicised the parts given by me, the rest being in substance supplied by the Form, put on the black-board, and copied as we go along.

Edward's first claim on Scotland, 1292—'Homage of King'—done by Balliol.

Edward's second claim on Scotland, 1293—'Appeals to Westminster'—alarm of Barons. *But*

Philip's claim on Edward—'Appear at Paris *re* sea-fight.'

1294, 'Formally surrenders castles.'

Philip's treachery—Keeps castles and allies with Scotland.

Edward's resource—Appeal to Full Parliament, 1295.

Large tax granted.

How the money went, 1296—Dunbar—flight of Balliol—'Crown forfeited'—two Guardians—Stone of Scone.

But France unpunished and the money spent!

How more funds were got—Archbishop's refusal—Bull C. L.—Clergy paid 'voluntarily!'—supplies collected by the King's orders.

'Now for France'—the plan { King to Flanders / Barons to Guienne

'Neither go nor hang.'

Edward to Flanders, but has to sign,

1297, Confirmatio cartarum—'Power of the Purse.'

Meantime in Scotland. Wallace (national feeling, Barons aloof).

1297, Stirling. Plunder of N. of England.

∴ Truce with France, 1298.
Ed. returns and beats Wallace at Falkirk

Of course it is not enough to prepare careful notes. The teacher must be absolute master of the subject, and make his pupils think it out again with him. If possible, a quarter of an hour in school should be given to a revision of the notes before the next lesson, to help the memory, and to insure that abbreviations are understood and that the links of thought are not forgotten.

It would be well at the beginning of a term to make out or mark in the text-book a short list of dates to be repeated constantly, to issue a list of the most important events in the period to be studied, and if possible to make these the subjects of essays.

No trouble should be spared to secure that this minimum is thoroughly learnt, and it should be understood that every boy must 'satisfy the examiners' in this part of the work at all events.

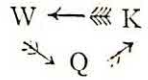
Illustrations

If now I explain some of the ways in which a little rough drawing may be used, I shall perhaps be thought trivial. Nevertheless, I will venture to give one or two very simple illustrations.

The following passage, we will suppose, is in the lesson.

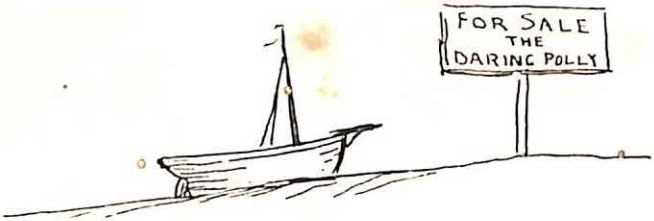
'It was not always easy for Walpole to tender advice to the King. George II. had a very exalted idea of his own wisdom, and liked to direct his ministers rather than to be directed by them. But Walpole had a good friend in Queen Caroline, and the Queen was the one person to whom the King would listen. To the Queen therefore Walpole used to communicate his views. The Queen suggested them to the King without referring to their origin; and thus it happened, not infrequently, that the King's views, as laid down to the minister, accorded exactly with the sentiments of the minister himself. This pleasant little farce helped to make things work smoothly, and George never suspected the innocent stratagem.'

This is how it appears upon the black-board, to be explained by the Form.



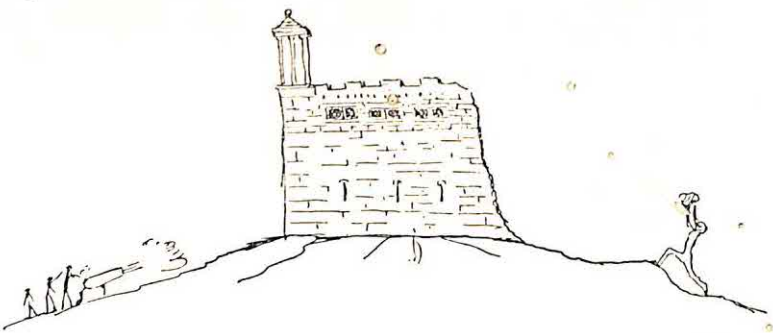
Oratio obliqua.

Or the following is put on the board as an illustration of Pitt's policy as a financier.



What is it?' 'A boat.' 'What else?' 'It is for sale.' 'Well, what of that? Why is it to be sold?' Then a paragraph of the lesson is recalled by some one, and a hand goes up. We are on the scent. 'What sort of boat is it?' 'A smuggler's.' Then half a dozen hands are up. We are in full cry. The facts come out fast enough. The smuggler had to sell it because the profits of smuggling were diminished by the reductions Pitt made in the Customs duties on goods that used to be smuggled. This may be thought childish; but I think it is better than asking, 'How did Pitt render smuggling unprofitable?' and being answered, 'By lowering the Customs duties.'

There is a passage in Gardiner, vol. iii., pages 820 and 821, too long to quote, on the condition of France at the outbreak of the Revolution of 1789, rather a hard passage for boys. I reproduce it in the following sketch, and partly explain it, in part get it explained, as follows.



We will represent society in France as a building, a mediæval castle, altered in parts, and more or less ruinous. It has a high tower, not in the mediæval style. Why? That is the Royal

power, rising over all after it had crushed the Feudalism of the Middle Ages. Now examine the upper strata of the building—representing the clergy and nobles. They are at the top. They retain the privileged position, but they have ceased to be useful. This part of the castle is pierced with large modern windows, it serves no purpose of defence, it actually weakens the structure, but it is very pleasant to live in. Below we have the main mass of the building. It does all the work, it carries the superstructure, but it has no modern improvements; it is dark and dungeon-like, and it is ruinous. This is the Third Estate, including the mass of the people, the impoverished peasants who pay the taxes and do the *corvée*. The whole structure is faulty and weak, and it is exposed to attack. There, on opposite sides, stand Voltaire with the Encyclopædists, and Rousseau. Voltaire and his friends are men of learning. They are throwing philosophic shells. Rousseau is hurling rocks. But no one is lifting a hand in defence of the *Ancien Régime*.

Some persons may be surprised to find that boys who need teaching of this sort should be using a book so advanced as Gardiner's History. But there are good reasons for using the same text-book all through a school, or in all but the highest forms. With the help of the Preparatory Questions, Gardiner can be profitably read by boys of thirteen and fourteen, and when they have learnt to read it, and arrive at a higher stage, it is not necessary to change the book, but to change the way of using it.

'Fifth Form' method

And this brings us to what I may define roughly as the 'Fifth Form,' or third stage of History. Of this I have had less experience and must speak more briefly and with more reserve.

The change in method I should summarise as follows. I should give less detailed help in reading, should require more connected knowledge, and give more attention to reproduction.

Taking for example the whole reign of Edward I., let an exhaustive set of examination questions be given out—questions not like the Preparatory Questions, answerable in a few words, but demanding a connected answer of from ten to thirty lines, or even more. The questions may overlap one another to any extent. Let a certain number of these questions be set as the preparation for each lesson, more or fewer according to their difficulty, and let each be copied as a heading to one or two pages of a note-book. As the pupils read, they should make a short abstract in their note-books of the heads of each answer. So prepared they come into

Form, and spend the first quarter of an hour or twenty minutes in writing answers; not, of course, to all, but each boy to one of the longer, or two of the shorter questions, the teacher allotting to each his particular task.

Then let the answers be collected, and a certain number of boys be 'put on,' either to read or to hear read, what they have written. The teacher may 'mark' either all the papers after school, or the boys who are 'put on,' as he does for a construe. But his chief function will be to criticise style and arrangement, to correct mistakes, to suggest the best method of treatment, perhaps to give a model answer or the heads of an answer, to show where the writer has introduced what is irrelevant, and where he has failed to utilise material that he perhaps really had at command, from not having fully grasped the bearing of the question. While this is being done, the Form will be adding to or correcting the notes already in their books. In this way the pupil will get his knowledge grouped and classified. It is surely unreasonable to read history like a chronicle, following a purely chronological order, all the term, and then to expect good answers to an ordinary examination paper at the end of it; unless indeed we only ask for isolated details, and then no doubt we may be satisfied. The study of each reign might be preceded by a lesson indicating its general character, its connexion with the preceding and succeeding periods, or on the condition of foreign politics. Some event of importance may form the subject of an occasional lecture, or a battle may be dealt with in detail. Battles will always be welcomed, but should be utilised sparingly. The details of most mediæval battles are very untrustworthy, and in describing a modern battle the teacher, unless he knows something of military tactics and strategy, will find himself talking about what he does not really understand.

During this stage of History teaching the black-board should still be utilised, and selected dates constantly revised.

I have now dealt with three stages of History Teaching—the earliest or Preparatory, the second or Fourth Form, and the advanced or Fifth Form stage. At what Form in any school the various stages are applicable, will depend of course upon the age to which the pupils remain at school, the amount of time given to History, and the progress made in it.

'Sixth Form' method

I will now go a step further, and try to describe what additional work may be done with a Sixth Form, on the supposition that some at least of the pupils are intending

to read History at the University, and that we may do something at school to prepare them for the change, without sacrificing the interests of those who will not go to the University, or will not read History when they get there.

When an undergraduate embarks upon the History Tripos at Cambridge—and I imagine it is the same in the Modern History School at Oxford—he finds himself furnished with a rather appallingly long list of books to be read, and a list of lectures to be attended. My own short experience of taking pupils in History at Cambridge impressed me with the fact that most of them lost a great deal of time through absolute ignorance of how either to conduct their reading, or to take serviceable notes of a lecture.

At this final stage, therefore, of school life, a boy should, if possible, be prepared for these new methods of study. He must learn to read a book and to make an abstract of it, without having any definite questions to guide him; and he must have some practice in taking notes.

Notes of lecture

I will consider the latter first. It may be said that boys are always taking notes at school and have practice enough in their classical lessons. But these are for the most part detached notes on definite points. The effort of listening to a lecture for three-quarters of an hour or an hour, following an argument or narration or both, seizing the essential points, listening as you write, and writing as you listen, and condensing the essence of a cloud of words, is a very different and much harder exercise; and therefore I think the teacher will do well who gives to some of his lessons the form of lectures. If the subject is long and difficult, a few headings may be hektographed and given round, or put upon the black-board, to serve as a guide to the less experienced. For a subsequent lesson the notes should form the basis of preparation, and the notes themselves should be examined. If the Form is new to the work, it is worth while now and then to hektograph model notes of part of a lecture, so as to show how the work should be done. At first it may be necessary to have a 'fair copy' made, but the aim should be to teach the pupils to take notes so clear and well arranged that no fair copy is needed. After a little work of this kind a boy will be prepared to take his place in a University lecture room, and not feel at the end of his second year that he wasted a great deal of his first from not being able to follow the lecturers. It is not needful to specify subjects for such lectures, but the simple outline

of Constitutional History is a convenient subject, and brings a good deal of scattered knowledge into focus.

And now I pass to the second point, the preparation for private reading at College. In our Fourth Form stage we guided the pupil by detailed questions to compel his attention to the text. In the 'Fifth Form' stage, we required him to group the details for himself under certain larger headings, in the form of general questions. We have now to teach him to make an abstract of a book without this assistance. For example, in the Fourth Form we might ask, 'Into what two parties were the French divided when Henry V. declared war?' fixing the attention on a single point, the civil war between the Burgundians and Armagnacs. In the Fifth Form we might ask, 'What arguments could be adduced in favour of Henry V.'s determination to declare war upon France?' including thus the whole range of considerations, both French and English. But in the final stage we leave the reader to discover that there are arguments, as well as to classify them.

Abstract of book

It is only by experience that one discovers how much harder this unaided reading is to the average mind than reading with a problem before it. But it is on this account all the more important to teach it.

The first attempt at an abstract is usually a mere catalogue of facts, jotted down as the reader goes along, without definite division or arrangement. It is best, after the first attempt has been made, to give out a hektographed model abstract of the passage set, to show how it may be done. This should be gone through carefully, and compared with the text, in Form. As the work improves and becomes more familiar, the passage done by the form may be gone through *vivâ voce*; the headings only, or a model of some difficult passage, being given out in hektograph. A fair copy should then be made, based of course upon the pupils original, supplemented by the notes he has made as the master goes through his own abstract.

It is best to use a book that has not been read before. If English History is to be taken—and this should depend in part on the thoroughness of the work done in the lower parts of the school—Professor Ransome's 'Advanced History of England,' or some of the 'Epochs of Modern History' are suitable. A careful comparison of Ransome and Gardiner, and the investigation of the points—fact, argument, or arrangement—on which they differ, makes a very useful lesson.

Of books of a more abstract character none can be better than Bagehot's 'English Constitution.' The style is admirable, abounding in epigram and happy concrete illustration; the argument is clear, but requires careful reading; and the book is not chopped up into little paragraphs with ready-made headings; so that the reader must find the landmarks for himself.

I have now dealt with the teaching of History at four stages, touching lightly on the first, which barely comes within the view of this chapter. I have spoken of it more fully elsewhere.[1] The three later stages I have described, perhaps, at a wearisome length, entering into details that may seem trivial to many of my readers. But, on the whole, it is better to seem trivial and egotistic than really to be vague and declamatory.

Supplementary remarks

A few general questions remain to be touched upon, and to these I turn in conclusion.

(i) Parallel books

I have suggested the use in the highest Form of parallel text-books. This might with advantage be extended to a lower stage; but I do not insist very strongly upon it, because in many schools the expense would be an obstacle.

(ii) Original authorities

Nor have I recommended any attempt at the use of original authorities. The systematic use of these is no part of school work, except in rare cases. But if the school has a good library, the more studious boys may be guided in their reading there, and encouraged to make some use of books that are not mere text-books, and to get some enjoyment out of the material from which History is written.

(iii) Geography

Another general observation must be made. At every stage History and Geography must go hand in hand, and the atlas must be the inseparable companion of the historical text-book. It is my own practice to trace and hektograph each term a map showing the main physical features of England or of France, and indicating by numbers or letters all the places mentioned in the portion of history set apart for the term's work. To identify the places with the help of an atlas, and find out what happened at each, is a useful exercise; and when the exercise has been corrected, the map may be used for repetition lessons until it is thoroughly known. In this way something is added to the 'permanent acquirement' of the term.

1 *Lessons before School, a Lecture.* (Wilbee, Harrow; also reprinted in the *Journal of Education* in 1894.)

I said at the outset that what is generally meant by 'Modern' History at school, is the history of England. Whether, or how far the history of Europe generally, or of any continental state, should be generally read at school, I will not attempt to say. It must depend upon the time available for History. This ought no doubt to leave a margin for some study of the great epochs of European History, especially in the higher Forms. And in this connexion it may be worth while to ask how much time we ought to claim in school for Modern History. I do not set any value upon one hour in the week. The lessons lie so far apart that the essential continuity of the subject is lost. Two hours a week for half the term is better; but I should like to claim two hours a week, with two quarters of an hour for revision and repetition.

(iv) Time allotted

As to the division of the subject, so much depends upon the length of the text-book used and the time devoted to it, that it is useless to attempt to lay down any hard and fast lines. It is sometimes proposed to divide the History of England among the various Forms of a school, allotting the period before the Conquest to one, from the Conquest to the great Charter to another, and so on. In this way, it is argued, each master will become something of a specialist upon his own period, and the general level of the teaching will be raised. But apart from the somewhat narrowing effect upon the master, the system would only be applicable if every boy passed through every form, and stayed in it the same length of time. Some boys would never reach the Reformation, and others, who rose rapidly, would skip alternate centuries and settle down in the Sixth Form to a two or three years' course of the most recent period.

(v) Division of Subject

It is better to divide the History into periods, and read the same period each term all through the school. Such a cycle may take two or three years, according to the time devoted to the subject. But the longer the cycle, the more imperative does it become that the outlines of the other parts of the history should be taught, or, if not actually taught, should be read and revised, and the pupils examined in them. Otherwise what we have called the 'permanent' or 'minimum' acquirement of previous terms will be entirely forgotten, and the connexion of the whole will never be grasped. For such revision a shorter and simpler text-book may be used, supplemented by the pupil's own notes, and perhaps by some book such as Acland and Ransome's shorter 'Outlines.'

I began by saying that I did not intend to draw any sharp line between 'Ancient' and 'Modern' History. Much no doubt may be said upon the teaching of 'Ancient' History arising out of the fact that some at least of the authorities are read in the original languages. But so far as it is taught from English text-books, almost all that I have said of the teaching of 'Modern' History applies equally well to 'Ancient.'

A word must be added, or rather repeated, to any experienced teacher who has followed so far, perhaps with impatience, this tedious essay; who knows his own strength, and the soundness of his work, and feels that he has nothing to learn from 'this fellow's crotchets.' Such a one I can only advise to count that conviction the reward of his labour, and to be thankful for even so much result of reading what, many pages back, I warned him was not meant for him.

Conclusion

I have written for the inexperienced and for those whose experience has been of failure. To them too a word remains to be said.

Methods are after all but the 'dry bones' of teaching. 'There are very many in the open valley; and lo, they are very dry.' He only who has a genuine interest in the story of the past, sympathy with the painful efforts and the slow achievements of men, and not less with their failures and their ignorance, can make the dry bones live. He only can gain for himself or impart to others, through the study of History, not merely an addition to knowledge, but the real spirit of History—a keen insight, a wide sympathy, a balanced judgment, an unfaltering love for truth. While he who regards the characters of his pupils as of more value than their attainments, who is quick to see, in the little world of school, the same elements of good and evil, the same forces of ambition and humility, of honour and cowardice, of truth and falsehood, the zeal for duty and the 'great refusal,' the self-seeking and self-sacrifice, that have shaped the History of Nations, will find in his lessons moments of opportunity which it will be his highest of all duties to turn to good account.

R. SOMERVELL.

ANCIENT HISTORY

Associations of the subject with Arnold

THIS subject has a peculiar personal interest for English students of educational practice and theory. History was a favourite subject with Arnold. He was for ever working at it himself. 'One of the few[1] recollections which he retained of his father was that he received from him at three years old a present of Smollett's "History of England" as a reward for the accuracy with which he had gone through the stories connected with the portraits and pictures of the successive reigns.' In his professorial chair at Oxford he quoted Dr. Priestley's 'Lectures on History' from his remembrance of what he had read, when he was eight,[2] in the school library at Warminster. 'At Winchester he was a diligent student of Russell's "Modern Europe;" Gibbon and Mitford he had read twice over before he left school.' After his election to a fellowship at Oriel, the first book he took out of the College library was Rymer's 'Fœdera.' And so to the end.

He was not content that history should be 'a plan;' it must also be 'a picture.' Towards this end his unceasing research (carried on even in the heaviest stress of school work) among the original authorities for the periods which he taught, was, as he always maintained, a help not to be dispensed with. So lively was his interest that he quite took the events of history to heart and made a personal matter of them. They often troubled his dreams; he would be 'present at the assassination of Cæsar, remembering distinctly his conversation with Decimus Brutus, and all the tumult of the scene in the Capitol.' Sulla he knew by sight—'with the livid spots upon his face, but yet with the air and manner of Walter Scott's Claverhouse.'[3]

[1] Stanley's *Arnold*, chap. i. p. 3 ('Minerva Library' Series).
[2] *Ibid.*
[3] Chap. iv. p. 113.

This intensity of feeling entered, natural and unforced, into his history lessons, and made them unforgettable. In the good or evil fortunes of Rugby, as a self-governing society or commonwealth, he could not help seeing illustrations of the working of all free institutions, whether Greek, Roman, or English. In these illustrations he recognised the unique opportunity by which, in a public school, the life of the community gives substance and meaning to history; at the same time that history shows the dignity and serviceableness of the organised life of the school. All this illustrated his favourite idea—the oneness of human life, in virtue of which he maintained the great classic writers to be 'modern authors'—concerned, that is, with a stage of political development analogous to ours. The study of Thucydides he held to be 'not an idle inquiry about remote ages and forgotten institutions, but a living picture of things present, fitted not so much for the curiosity of the scholar as for the instruction of the statesman and the citizen' (Preface to vol. iii. of his 'Thucydides').[1]

Arnold's practice and theory will form the starting-point for the treatment of the subject here. When the rules and first principles of an art are in debate, as is the case in England with the art of teaching, the method of investigation most likely to be fruitful in results and least likely to divide opinion is that which refers constantly to the handling of the art by one of its acknowledged masters.

Preliminary Questions

The inquiry implied in the subject is a double one

1. In point of *organisation*, what place should be given to ancient history in the curriculum of a school?

2. In point of *teaching*, how is the individual teacher to make sure that his pupils get the most they can out of the work?

In dealing with the first of these questions it will be necessary to take history as a whole, apart from the divisions into which its

[1] A fine instance of his application of ancient history to the circumstances of school occurs in a letter to a colleague, referring to certain criticisms on Rugby discipline. 'When we are attacked, we have some right to say with Scipio, who, scorning to reply to a charge of corruption, said, 'Hoc die cum Hannibale bene et feliciter pugnavi,'—'We have done good enough, and undone enough evil to allow us to hold our assailants cheap.' The passage recalls Matthew Arnold's witness to his father's power of making history credible:

'Through thee I believe
In the noble and great who are gone,'

subject-matter falls. These are, indeed, quite arbitrary. We may agree with Arnold that the year 500 A.D. is the most convenient date at which to say that ancient history closes, since it is the nearest round and easily remembered number to the period which marked the decisive entry of two new and striking elements into political history—Christianity and the Teutonic races. But the distinction does not affect the question of the place of history in a school curriculum.

Every time-table is a numerical expression of the relative values of different studies in the sum-total of training. Is history 'worth its place' in a time-table, and how big a place shall it have? Which, again, implies the question: Is there anything, either in the information conveyed or in the faculty cultivated by the study of history, that should make it an indispensable part of education?

The province of history[1] in the kingdom of knowledge is the past of mankind, and more particularly the past of mankind as organised in political communities. In a very vague and wide sense history may be said to include such studies as deal with man individually and socially (anthropology, archæology, &c.); but in its specific sense, and as a school-subject, history is the 'biography of political societies.' It therefore has so much in common with art—and in particular with the art of literature—that its aim is to construct a representation of human life. But human life in a special aspect is its theme, and this it seeks to reproduce *as a series of events in order of time.* The use of the order of time and the treatment of men as grouped in governments are the specific marks of history. Thus it has so much in common with natural science that it proceeds only after a methodical study of given matter and aims at stating what has actually occurred. To do this it must have canons of evidence, by which it decides whether or no this or that really did happen.

The importance of the *information*, then, conveyed by history

[1] The word itself is interesting;—originally, of course, *ἱστορία* meant inquiry or investigation of any kind. By Aristotle it is applied to that preliminary collection and record of the 'facts' of a subject which must precede discovery of general principles; such, *e.g.* as his own account of animals, which, imitated by Pliny, has given vogue to the term 'Natural History.' The specially *human* sense which the word generally bears now is due perhaps to the influence of the opening sentence of the Father of History himself: 'Ἡροδότου Ἁλικαρνησσῆος ἱστορίης ἀπόδεξις ἥδε.

'Story' is only a truncated form of the same word.

seems to lie in this: that without it a momentous aspect of human life must remain blank to the imagination and dark to the reason, and that if we are ever to arrive at an understanding of things as they are, it can only be by a knowledge of the process by which they came to be so. The importance of the *faculty* which it trains is that it is a faculty constantly required for critical issues in actual life. The importance of the subject might not seem to need enforcing. But it is still only an optional subject in English primary schools, and, in point of fact, greatly neglected as systematic matter of instruction.[1] In France the children in primary schools not only receive a thorough grounding in the history of their own country and of its relations to its neighbours, but are also taught in outline some of the main events of Greek and Roman history, and even a few of the most salient facts about the great Eastern civilisations to which we owe the beginnings of our own. In Germany the scheme is not so elaborate, but insures, even in elementary schools, a clear outline of German history.

As regards secondary schools, a consideration of the nature of history leads to two corollaries:

1. That in point of *information* an ideal curriculum in history will, as a final result, give some outline, however meagre, of the continuous series of events by which Western Europe has come to be what it now is.

2. That in point of *faculty* an attempt will be made with the higher forms to convey a mastery, however imperfect, of the laws of evidence by which a great historian assures himself of the credibility of his 'facts,' of his manner of dealing with a mass of material, and of the descriptive art by which he selects typical points for narration.

Taking it now for granted that history is to be taught, as an indispensable subject, through all the forms of a secondary school, I shall put in for consideration two schemes of history teaching: one, only in outline, sketched by Arnold in his essay called 'Rugby School—Use of the Classics,' reprinted in his 'Miscellaneous Works' (London, 1845); the second, that of the Prussian higher schools, as set forth in the 'Lehrpläne und Lehraufgaben für die höheren Schulen' (pub. Berlin, 1896), by Wilhelm Hertz, with the authority of the Prussian Minister of

Two schemes of history teaching

[1] In the Blue Book for 1895–6, out of 22,765 school departments examined in 'class subjects,' only 3,597, or less than a sixth, are reported as presenting history.

Education.[1] In regard to the latter it is particularly worthy of note that an identical course is laid down in history for Gymnasien and Realschulen (classical and modern schools).

A.—Arnold's Scheme of Historical Study

(a) *For Young Children*

A series of lessons on pictures or 'prints' of scenes from universal history portraying remarkable events in striking fashion. Their main object is to give vivid centres of association round which to group the stories. [Arnold seems to have been conscious that he himself owed much to the method of combining a story picturesquely told with a picture speakingly drawn. See the story given above of his exploit at three years old, and compare the passage in 'Stanley,' c. iii. p. 100. 'In examining children in the lower forms he would sometimes take them on his knee and go through picture-books of the Bible or of English history, covering the text of the narrative with his hand, and making them explain to him the subject of the several prints.']

(b) *For the Middle Forms of Schools*

The study of brief and lively histories of Greece, Rome, and England.

The main purpose at this point is to excite curiosity and to stimulate appetite for increased knowledge.

(c) *In the Higher Forms*

The study of some first-rate historian 'whose mind was formed in, and bears the stamp of, some period of advanced civilisation analogous to that in which we now live,' such, for instance, as Thucydides or Tacitus. In this stage the teacher's object will be to encourage *reflection* among his pupils by leading them to study (i) the criteria of a credible narrative; (ii) the causes of events and the history of institutions. They will be trained to look for the important points, to make judgments, and to apply them to analogous circumstances.

[1] Officially designated 'The Minister for Ghostly, Educational, and Medicinal Affairs.'

B.—COURSE OF HISTORICAL STUDY FOR SECONDARY SCHOOLS IN PRUSSIA (CLASSICAL AND MODERN ALIKE) ARRANGED FOR NINE YEARS

This falls into three main divisions.

(α) First two years, *preparatory* (in two lowest forms). One hour a week of oral instruction without text-book of any sort, firstly, in 'picturesque biographies' ('Lebensbilder') from the history of the Fatherland, starting from the children's own time and district; secondly, in the 'saga-like' early history of the Greeks and Romans

(β) From the third to the sixth year, *intermediate*[1] (from 'Quarta' to 'Untersekunda').

(i) A general review in outline of Greek history to the death of Alexander the Great, and of Roman history to the death of Augustus, with brief references to the influence of primitive Oriental civilisation on Greece and Rome. Two hours a week for one year.

(ii) Starting from the death of Augustus and a sketch of the history of the Roman Western Empire, an outline of German history to the close of the Middle Ages. Two hours a week for one year.

(iii) German history from the close of the Middle Ages to the accession of Frederick the Great. Two hours a week for one year.

(iv) [2] German history from the accession of Frederick the Great to the present time. Two hours a week for one year.

(γ) *Advanced*, last three years from 'Obersekunda' to 'Ober Prima.'

(i) Revision of the chief events of Greek history down to the death of Alexander, and of Roman history to the fall of the Roman Empire in the West, with a closer study of the causes and effects of the events described,

[1] The forms of German secondary schools are arranged for a nine years' course, every boy nominally remaining a year in each form. The forms are numbered from bottom to top, contrary to the English practice, VI., V., IV., III. B and A, II. B and A, I. B and A.

[2] N.B.—In every case where a period of German history is to be studied, the official syllabus lays down that external history, so far as it is of world-wide importance, is to be taken along with German. The syllabus also insists on the study of the geographical background of history.

and of ancient institutions, political and social. Three hours a week for one year.

(ii) Study of 'epoch-making' events of universal history from the fall of the Roman Empire in the West to the close of the Thirty Years' War, with special reference to historical cause and effect. Three hours a week for one year.

(iii) Study of the chief events of modern history from the close of the Thirty Years' War to the present day, with special reference to the House of Hohenzollern. Three hours a week for one year.

The official syllabus for Prussian secondary schools defines the general object of the historical course as follows: First, the imparting of a certain knowledge, viz. that of the most striking events of universal history, together with a more detailed account of German and in particular Prussian history; secondly, 'the development of the historical sense.'

Prussian notes on method

It appears also from the 'Remarks on Method,' which follow the curriculum, that the Prussian Ministry of Education desires to impress upon its teachers the duty of carrying out the present Emperor's wish that the children should be warned against revolutionary methods in politics, and should be encouraged to loyalty and patriotism. The directly practical and national colour given to history teaching in German schools, and its vigorous appeal to feeling, are as strikingly characteristic as the system and the symmetry with which, on the intellectual side, the scheme of instruction has been planned. In these remarks on method special attention is called to the necessity of studying the social and economic aspects of modern history with the older boys. But great stress is laid on the difference of method to be employed in the intermediate and advanced stages of the course. In the intermediate, it is the external and picturesque aspect of history and the personality of great men that are chiefly to be dwelt upon. In the advanced, the study of the causation of events and of the inner life of institutions is to be the main point.[1]

[1] The historical curriculum in French Classical secondary schools, as by decree of Jan. 28, 1890, is very similar in matter covered to the Prussian course. The history of France is taken in fully as great detail as the history of Prussia. One whole year (in the 'classe de sixième' for boys of eleven) is given to the ancient civilisations of the East. But the essential point of the systems, both of Arnold and the Prussian Ministry, viz. the *double* survey of the ground in two stages (after the preparatory stage), is lost in the French system.

It will be seen that in some points there is a remarkable agreement between the courses schemed respectively by Arnold and the Prussian Ministry of Education. They are at one in recommending a triple course, adapted to three stages of mental growth; each section roughly to cover the whole ground as regards matter, but to take different aspects of it, and to treat them in a wholly different spirit and method. Arnold's plan, in the third stage, of connecting the study of history with the literary study of great historical writers, seems sounder than the Prussian idea of insisting so much upon the present-day political bearings of the subject.

Similarities between the two schemes

The *principle* of arrangement is the same in both cases. The subject-matter is arranged, not in the order which would occur to an historian as the 'natural' or 'logical' order prescribed by the subject itself, but in a 'psychological' order, prescribed by the varying interests and capacities of children at different stages of growth.

Principle of the two schemes

Accepting this as the true principle, and having in view the needs of an English secondary day school, of the grammar school or 'local' type, such as, on the average, keeps its boys from nine to eighteen, we should accept also the three stages, with a few preliminary notes on them.

(*a*) The preparatory stage will have partly been done at home or in a preparatory school. Pure narrative may to some seem out of place, even in the First Form. But the text-book will be of the simplest. The subject-matter will be mainly biographical, and the lives selected will be from all ages and countries of European history. The effect of the lessons will still mainly depend on the power of the teacher to 'tell a story.' It has been shown by experiments that dramatic representations of historical scenes by young children themselves are most effectual in making an interesting and lasting impression.

Notes on the three stages

(*b*) In the intermediate stage, from ten to fourteen, boys are ready for history, but with the element of *story* still strongly marked in it. The picturesque and stirring side of things, movement and adventure, and the good or evil fortune of persons, will interest them most. But their interest in their heroes once awakened, they will, for their sakes, willingly learn a great deal about the tedious matters in which those heroes were engaged. At this stage everything seems to depend on two conditions not easy to reconcile: first, *on getting rapidly over the ground* and passing boldly from period to period and country to country; secondly, on

giving detail in sufficient abundance to make the narrative imaginable to boys at an age when they see everything 'from the small end,' in its most concrete and personal form. It will be best perhaps to take chapters of history here and there, the master himself bridging the gaps with needful summaries, but pressing on and keeping the sense of *movement* always lively. If there is a good middle-school library, and the boys are reading 'Hereward' and 'Old St. Paul's' and 'Woodstock' and 'Erling the Bold' and 'The Cloister and the Hearth' and 'Ivanhoe' for themselves, there will not be so much need for the master to insist on the picturesque aspect of history in form work.

(*c*) Accepting Arnold's proposal to connect history at this stage directly with the work in literature, we shall still require, if the history of the people of the Mediterranean and Atlantic sea-boards is to be in any outline, however meagre, present as a continuous series of events to the mind of the pupils at the end of the course, two or three books, such as Freeman's short 'General Sketch of European History,' Bryce's 'Holy Roman Empire,' or, in the Fifth Form, C. M. Yonge's excellent 'Landmarks of History—Ancient, Mediæval, and Modern.' Books for reference in the school library become only too abundant at this stage. Besides Grote and Mommsen, and Freeman's 'Historical Essays,' there are Duncker's 'History of Antiquity,' and some of the volumes of those two excellent series 'Story of the Nations,' and 'Heroes of the Nations;' and for an introduction to the philosophy of history Maine's 'Ancient Law,' and Bagehot's 'Physics and Politics.'

Connexion of the study of ancient history with the Scripture lesson

An enormous opportunity and advantage will be thrown away unless, all through the course of history, the Scripture lessons are so arranged that, among other things, and with due respect to the main purpose for which they are given, they may on the *historical* side help to fill in the outline of ancient history. No small part of our life is Semitic as well as Aryan; and the relation of Aryan to Semite is a most fruitful subject of study. The elementary facts of it can best be given through the Biblical lessons. In the history of the Hebrews we come necessarily into contact with the great Eastern Empires—Egypt, Assyria, and Persia. Later, in the period between the Old and New Testament, the age of the Septuagint version and the Apocrypha, boys may get to know something of a most important epoch, which is, perhaps necessarily, neglected in 'secular' history, the Alexandrine epoch and the age of the Hellenistic monarchies. Later again they approach the richest

History Scheme

Form	Hours	Subject-matter	To correspond with (in the historical part of the Scripture lesson)
Stage I. I.	1½	Some striking scenes from European history, ancient and modern	Patriarchs, judges, and kings in the Old Testament
Stage II. II.	2	Chapters from the history of the English people, from their entry into Britain to the present day	Chapters from the history of the Hebrews, from the migration of Abraham to the present day
Stage II. III.	2	*First Term.*—Britain before the coming of the English. The Romans in Britain *Second Term.*—Chapters from Roman history down to 145 B.C. *Third Term.*—Chapters from Roman history to the invasion of the Teutonic races and the withdrawal of the Roman legions from Britain	Hebrew history, from the first alliance of the Maccabees with the Romans down to the destruction of Jerusalem by Titus, along with an outline of the spread of Christianity to 500 A.D.
Stage II. IV.	2	*First Term.*—Romans and Greeks; Pyrrhus, Flamininus, and the Roman conquest of Greece; Græco-Roman life; Herculaneum and Pompeii *Second Term.*—Greek history to 145 B.C. *Third Term.*—Greek history to the capture of Constantinople by the Turks	Hebrew history, from the first king to the time of the Maccabees; the Jews in Babylon; their return under Cyrus; Alexander the Great; Jews and Greeks; the Septuagint version
Stage III. V.	2	*First Term.*—A reading in modern history, *e.g.* England under George III., with selections from Burke *Second and Third Terms.*—Rome and Carthage, with readings from Livy and Polybius *Modern Side.*—French history in French authorities	Hebrew history, from Abraham to Saul; Israel in Egypt; Egyptian and Phœnician civilisation
Stage III. VI.	3	In the *First Term*, Classical and Modern Sides together in a short period of English or other modern history, read in connexion with contemporary literature or the work of a great historian In the *Second and Third Terms*, short periods of Greek or Roman history, with corresponding authors, along with 'outline' periods from the history of the same people *Modern Side.*—Similar study of French and German history	Special books and periods, read in connexion with the Septuagint and the Greek Testament; more especially the Prophets, the Psalms, and the Epistles of St. Paul and St. John, with the Acts of the Apostles

possible mine of historical interest in the 'Acts of the Apostles,' where East and West meet in the person of St. Paul, a Hebrew of the Hebrews, yet born a citizen of Rome, a son of Benjamin who wrote letters in Greek and quoted Greek poetry and philosophy; arrested in the Temple at Jerusalem for breach of Levitical law; saved from his own countrymen by Roman legionaries to defend himself before Roman governors and to claim a trial at Rome, in the highest court of appeal, the presence of Cæsar himself. Here we have ancient history of the most important kind—an instance of Roman imperial rule in actual working—with the great advantage that it is history read in an 'original source,' and that, literature of the highest value.

It is now possible to conclude the first part of the subject with a suggested scheme of history for a school of the type mentioned above (see preceding page).

Second Part of the Subject

Methods of Teaching

The method, as distinct from the organisation, of history teaching has been treated with special knowledge by the writer of the chapter on 'Modern History.' I would wish to subscribe fully to all that he says upon the necessity of so adapting one's method as *to train boys to read for themselves*,[1] and to give a clear and precise account of what they have read. Every subject of teaching has, like every form of government, a 'degenerate half-brother' with a misshapen likeness to itself. The corruption of history teaching is unintelligent cram of unexplained 'facts.' Mr. Somervell's method of 'preparatory questions,' or something very like it, is necessary to train boys to the proper use of a text-book. The choice of a text-book is a matter of great difficulty. In the preparatory stage, when we are still at 'story' and not yet advanced to 'history,' we can, if necessary, do without one. In the intermediate stage, the first systematic survey of the ground, the text-book should be as short and as simple as possible. In Forms II. to IV. everything must be done to prevent the *premature* introduction of difficulties which ought not to arise until later. No time is more grievously and fruitlessly lost in teaching, than that which is

Object of method in history

Text-books

[1] 'You come here not to read, but to learn how to read,' Arnold used to say to the Sixth at Rugby. *Stanley*, c. iii. p. 80.

bestowed upon elaborately explaining to a boy at twelve what—without explanation—will be to him, at sixteen, as plain as way to parish church. In the intermediate stage, then, we should have a short text-book, and fill in details at discretion. The boys will, of course, have note-books for history, even in the Second Form—note-books well bound and of good paper, with a wide page, not too closely ruled. In this they will copy maps and sketches from the blackboard, and will write any fuller account of persons or things which their master may think it is judicious to give them.

Note-books

In the middle forms of a school, with boys from ten to fourteen, visible objects are scarcely of less importance as an aid to imagination and memory than at an earlier stage. It may be laid down as essential that no history lesson should be given below the Fifth Form without illustration of some sort, whether by way of map or plan drawn on the blackboard, rough colour-sketch mounted on brown paper and pinned conspicuously to the wall, photograph, coin (actual or fac-simile), a rubbing from a monumental brass or inscription, or something of the kind.[1]

Illustrations

Discretion and economy are needed in the use of illustrations. The teacher will find that the simpler and more strictly relevant to the main point of his lesson he can make them, the greater will be their effect. A clear and striking picture or model makes an admirable *starting-point* for a lesson in history. A few questions to the form will insure that they are looking at the important points in it; a rough sketch in their own note-books, if the illustration be simple enough, will fix the gist of it still better. At each new section of the lesson a new illustration may appear, but it is well to be sparing with them, else the show may get the better of the substance. Photographs

Care needed in their use

[1] A museum has been started at the offices of the Teachers' Guild, 74 Gower Street, W.C., where specimens of historical illustrations may be studied. An excellent series of boldly coloured pictures of striking events in European history is to be seen at the S.P.C.K. offices in Northumberland Avenue. Series of magic lantern slides have been carefully prepared by Messrs. G. Philip & Son, 32 Fleet Street, E.C., to illustrate particular text-books. A catalogue of such a set for Fyffe's History of Greece, with notes by the Rev. T. Field, is to be got from Messrs. Macmillan and Co. An organised system of lantern illustrations for history lessons has been worked out by Canon Lyttelton at Haileybury College. A beginner will find no lack of help in obtaining illustrations, vivid and suitable.

mean little or nothing to young children (with whom colour is a necessary element for full interest and understanding), but they are very useful with the highest forms, and to be had in abundance.

The Line of Time

One indispensable piece of apparatus the boys will make for themselves. This is the Line of Time, by which the grim difficulty of 'dates' is to be approached. Every boy should possess a strip of paper 2 ft. 4 in. in length and 8 in. broad. Leaving a margin at each end of 1 in., he draws a line 26 in. long. The right extremity of the line is the present moment in the present year. The left extremity is a somewhat uncertain point in the 'dim and distant' past, to which history can travel by means of the Egyptian monuments. As the line is constantly growing, like a live thing, at one end, and cannot be precisely fixed at the other ('an island at the conflux of two eternities'), any boy will see that we can only measure distances on it by taking a point inside it to work backwards and forwards from. We *might* take any point. Thucydides, for instance, used the point at which the Peloponnesian War came to an end; the later Greeks that at which the first great games were held at Olympia; the Romans that at which they fancied their city was founded, &c. &c. As a matter of fact, we now all agree to use the same point—that which old chronologers assigned for the birth of Christ. A little thought will show that the figure to be assigned to our measuring point must be, wherever we place it, 0. Allowing 2 in. to represent in space what 500 years are in time, we shall put our 0 point at $7\frac{3}{5}$ in. from the right extremity of our line, which will now represent 1897 as near as may be. This will leave $18\frac{2}{5}$ in. to the left of our measuring point, which will enable us to go back 4,600 years, enough for practical purposes. The 2-in. points are now to be marked off on the line, to show periods of 500 years. Two inches to the right of 0 will be 500 A.D., 2 in. to the left of it 500 B.C., which we may represent for short by -500. The first date which each boy is to enter on his Line of Time is his own birth, which, if he be ten years old, will clearly be $\frac{1}{25}$ in. to the left of 1897. So tiny a space he will find difficult to draw. All the more easy will it be for him to draw the moral as to the relative bulk of his own history and that of the rest of mankind. After this first date, he will add others at the discretion of his master. The long strip of paper will be gummed into the last page of his note-book, and neatly folded so as to fit inside its cover without protruding, ready for constant reference.

THE LINE OF TIME (*on reduced scale*)

ANCIENT HISTORY ..... MEDIÆVAL HISTORY ..... MODERN HISTORY

A.D. 500-1500

1500 onwards

Past

—4600 Early Egyptian Dynasties

—4000

—3500 The Assyrian Monarchy

—3000

—2500

—2000 About this time Abraham migrates to the Holy Land

—1500 About this time Moses leads the Hebrews out of Egypt

—1000 Solomon King in Jerusalem

1000-700. About this time the Phœnicians trade with the Hellenes and teach them their alphabet

776. The Greeks first hold games at Olympia

536. The Jews return from Babylon

—500

490. Marathon

390. Rome burnt by the Gauls

202. Zama

44. Julius Cæsar assassinated

BIRTH OF CHRIST

0 B.C. / A.D.

449. The English come into Britain

500

600. Mahomet preaches in Arabia

1000

1066. The Normans conquer England

1096. The Crusades begin

1453. The Turks take Constantinople

1492. Columbus lands in America

1500

1517. Luther begins the Reformation in Germany

1887. Tomkins major, natus est

1897

Future

A number of important advantages will flow from the use of some such Line of Time, as compared with that of an ordinary 'Date Card.' The comparative length of modern, mediæval, and ancient history will be seen at a glance. Dates will no longer be isolated, but—as they ought to be—connected points in a continuous series. The analogy of the Christian era to the meridian of Greenwich, each denoted by the cypher o, will become clear. A little practice will enable a pupil to 'visualise' a date on the Line of Time as surely as he can a longitude on the map of the world. And just as a teacher of geography makes a habit of referring a sectional map to the larger one of which it is a part, so will the teacher of history begin the study of any particular period by 'locating' it on the line of universal history, and ascertaining that his pupils know where they are before they enter upon detailed study.

Historical atlas

Another implement without which history cannot intelligently be studied is a historical atlas. It does not need the authority of Arnold to enforce the necessity of a clear view of the geographical background on which the pictures of history are to be painted. Several historical atlases, fit for class use by the boys, good and cheap, are in the market, besides the great works of Spruner and others, one of which the form-master will have by him as a book of reference.

Arrangement of lessons

Thus armed, master and boys will address themselves to the plan of campaign. In the Middle School, from Form II. to Form IV. inclusive, of which we are now speaking, they will be able to count on about thirty-three weeks in the year free of examinations. This will give sixty-six hours for history, of which ten may be set aside for recapitulation. Fifty-six hours will remain for the study of new work, with a certain proportion of text-book allotted to each. The form of the individual lesson will naturally vary, but at its beginning will usually come a restatement by one or two of the boys of the main points learnt at the last lesson, and at the end a few minutes will be given to a glance at the portion of the text-book to be read before the next, with 'preparation questions' as a guide to reading. The lesson itself will partly take the form of an account by the boys of what they have read in the text-book for the day, and partly of an illustrated supplement by the master of points requiring special attention or explanation. Every opportunity, of course, will be taken of connecting the history with other parts of the form work, with the construing of Cæsar or Xenophon, with

the 'Scripture' lesson, with English literature, and even with the current news of the day, if so fair a chance presents itself, as, for instance, the famous quarrel between Greece, Turkey, and the 'Six Powers' over the future of Crete.

It will be well, for an occasional variety, to take a 'subject-lesson' outside the text-book altogether. An excellent theme for one such is the History of the Alphabet. It is amusing to trace back our letter F through Roman and Greek alphabets to Phœnician, and ultimately Egyptian; the horned snake of the hieroglyphics is still to be recognised in the letters of Western Europe. Such a lesson connects together hitherto isolated fields of history, and gives a valuable insight into the pedigree of modern civilisation.

Subject-lessons

Other subjects may be 'The history of some place-names,' 'The history of titles, Kaiser, Czar, Emperor, Elector,' &c., 'Egypt and its conquerors, from the Persians to the English,' &c. &c.

Visits to museums, or places of historical interest, if carefully led up to, and restricted in scope to a number of points of special importance, may be useful.

In the V. and VI. Forms, Arnold's view that the teaching of history should be directly connected with the study of some great historian presents so many advantages that, once fairly tried, it is likely to be accepted for good. It concentrates attention upon the really fruitful periods of human history.[1] History, unexpressed by some great writer, is perplexed, difficult and dull; and—whatever its worth to the 'specialist'—has little value in school. The study of a great historian delivers the form from the tyranny of the text-book, which at this stage takes its proper place as servant, not as master. It introduces boys to the material which lies at the back of written history, and puts history itself in its true light, as an investigation no less than a representation. By its means, boys are introduced, in a natural way, to the great questions in the study of which the chief excellence of school-work in history lies. What is the evidence for this or that statement? How far is the writer biassed in his judgment? What light is thrown upon the incident by the comparison of similar cases? The attempt to answer such questions, imperfectly as it must be done, even with a good Sixth Form, yet supplies an inestimable training. It cultivates that

Method in the advanced stage

1 'Perioden die kein Meister beschrieb, deren Geist auch kein Dichter atmet, sind der Erziehung wenig wert.' Herbart, quoted p. 787 of Rein's *Encyklopädisches Handbuch der Pädagogik.*

'historical sense' or power to weigh evidence and to realise events as a sequence which, as a lasting possession for life, is obviously more useful than any recollection of the subject-matter upon which the faculty was first exercised. It is one of the great advantages of ancient history compared with modern that the materials for historical judgment are usually of such bulk that they can be grasped without a vast expenditure of time. In this way a reading, say, of Thucydides, Book I. (as edited for schools by W. H. Forbes, and published by the Clarendon Press with reference to the authorities collected in the notes to Grote's History), will make an excellent introduction to the 'critical' study of history. So, in a different way, will the study of the early books of Xenophon's 'Hellenica.' On the side of Roman History a splendid study of this kind is afforded by Livy, Book I, in Seeley's edition, along with Ihne's little book on 'Early Rome,' in the 'Epochs of Ancient History.'

Arnold's practice of studying modern history, also, with his Sixth, and of using, wherever possible, the method of comparison, *e.g.* as between the campaigns of Hannibal and Frederick the Great, has other good results besides that of delivering classical students from too narrow a devotion to antiquity. It is the 'comparative method' as used by Niebuhr and others which has in this century thrown so great a light on all parts of history, but particularly on the origin and growth of institutions, such as the Patriciate at Rome, and the Archonship at Athens. If one term out of the three be given to modern history, the other two can be given to ancient. Conversely, on a 'modern side,' one term will be given to ancient and two to modern history. With this scheme, the critical study of some books of the Old Testament, with reference to the Septuagint Greek, and of the New, in the original, will work harmoniously enough.

The 'comparative method'

The method, at least, in the Sixth Form, will approximate closely to that of the 'Lecture,' and the boys will begin to practise the valuable art of taking rapid, clear, and business-like notes. But a skilled form-master will take precautions to avoid too rigid or monotonous a procedure. The lesson will sometimes take the form of an *investigation* into a point of difficulty. One of the elements in Arnold's teaching which evidently impressed his pupils most was that he himself was for ever learning. He would constantly send for books of reference and 'hunt up' what he wanted to find, taking care to express his

Method of individual lessons

pleasure at discovering something new or correcting a misapprehension of his own.

Essays, &c. Sometimes essays will be set on points of history that will need research in the school library. And the Debating Society will often lead to lively historical discussion. Controversy of any sort, if only interesting enough, is an effective spur to study. Was Catiline a desperado or a martyr? Did Mary Queen of Scots really write the casket-letters? Was the assassination of Cæsar a crime as well as a blunder? Such ancient problems are new to boys, who readily take sides in such matters, and they will not be worse judges later on for having begun by playing the advocate. A world of fascinating reading opens before them as soon as they have knowledge and experience enough to take interest in the theory of government. Selections from Aristotle's 'Politics,' chapters from Maine's 'Ancient Law,' and Bagehot's 'Physics and Politics;' Mill on 'Representative Government' and 'Liberty,' Macaulay's Essays on the 'Utilitarian Theory of Politics,' have a strong attraction for 'politically minded' people in their last year of school, and will lead to more reading afterwards.

For periods studied in 'outline' a text-book will be used, and happily the choice of such for the V. and VI. is larger and better than for the lower forms. But the style of some is unfortunate. The influence of Mommsen has had an unhappy result—predicted by Freeman—on the way in which some of the great figures of Roman history, Pompey, and Cicero, and Cato, are habitually written and spoken of. 'The poisonous tendency to modernise' has also led to a custom of making the Romans and Greeks serve as texts for homilies on details of politics or morals. But there are still text-books to be found that are free from such faults, and are written in a style not unworthy of the heroic dignity of their subject.

Text-books

The tradition of Arnold is not extinct, and there are schools in England in which a master's enthusiasm for history communicates a lasting love of the study to his pupils. It is a saying of Stevenson's[1] that 'to be wholly devoted to some intellectual exercise is to have succeeded in life.' To this form of success careful teaching in history is at least as likely to lead as that in any other subject.

[1] In *Weir of Hermiston.*

Note on the Literature of the Subject

I have been able to find little in English on the theory of history teaching except the section in Fitch's Lectures. There is an American volume in the 'International Education' series, by Hinsdale, on 'How to study and teach History,' but it contains little that will help English readers. The volume of essays on 'Methods of Teaching and Studying History,' in the 'Pedagogical Library, ed. by G. Stanley Hall (2nd edition, pub. Boston, 1896), contains one or two helpful papers. 'Studies in Historical Method,' by Mary Sheldon Barnes (Isbister, 1897), is enthusiastic. It contains a full bibliography of American literature on the subject. There appears to be no recognised authority on the subject in French. The German literature is, of course, abundant. The article in Rein's 'Encyklopädisches Handbuch der Pädagogik' gives a full account of it. I have got most from Oskar Jäger's article 'Geschichte' in the 'Handbuch der Erziehungs- und Unterrichtslehre' and the same writer's 'Bemerkungen über den geschichtlichen Unterricht.'

H. L. WITHERS.

GEOGRAPHY

STRANGE to say, the great and very obvious utility of geography, which is often adduced as an argument for its wider teaching, would seem to have been responsible in part for the insignificant position it has occupied in the time-tables of the better secondary schools of the country. For this there were causes, and, as must be owned, very reasonable causes, wholly distinct from either old-fashioned prejudices against a subject which could be put to such immediate uses, or the conservative spirit which considered the proper methods of education as few and already determined.

Neglect of geography partly due to

So obvious was the practical use of geographical knowledge that it led in the sphere of teaching to a confusion between geography and the accumulation of a number of facts, with the unfortunate result that efficiency has been judged—and often still is judged—by the mass of the facts thus collected and retained in the memory. Isolated facts in geography, just as isolated dates in history, are little more than the mere raw material of study. They are useful in the practical world, they are invaluable to the student, but, for all that, they form only a part and not the whole of geography. Owing, however, to their great utility, especially in the former of these relations, their true position was mistaken ; and little or no attention came to be paid to other and more important aspects of geography. Nor did the mischief end with those who made the mistake. Their error attached a reputation to geography as a school subject which, however undeserved in reality, was not undeserved so far as much of its teaching was concerned. Geography was viewed as a mere exercise of memory, and of rather a low order even as that. It was considered—and by many still is considered—as almost necessarily devoid of educational training.

Bad methods of study

Some estimate of the truth of this description, and of the value in which geography is held by the higher educational world, may be formed by comparing the position which it occupies in large public schools and in the so-called commercial schools. Taken as a whole, the former are the schools with high educational ideals; but the latter teach geography with greater assiduity.

Different position of geography in various schools

To relieve geography of its former reproach, and to obtain the full advantages offered by its study, other considerations than those involved in its practical use require attention. The variety of these is so great that those who desire more prominence for geography in our educational system can rest their advocacy on a wide basis. Even practical use, harmful though its over-emphasis has proved, constitutes, if rightly considered, an argument in its favour.

Advantages to be derived from its study

But apart from any direct material usefulness, distinct from any question of value as part of an educational gymnastic, there are many advantages possessed by geography as a school study in connexion with other subjects. Some sort of geographical training is necessary in the case of those who are reading history, if they are to follow historical movements with any intelligence. Not only so, but if we take into account subsequent intellectual interests, a liberal knowledge of geography and of the influence of geographical conditions is indispensable for the true appreciation of the political growth and economic development of the different nations. Much error in economics, many mistakes in history, are traceable to nothing other than ignorance or disregard of geography. Again, travel and discovery, with their wealth of incident, supply an excellent means of stimulating the imagination and widening the range of intellectual interest. Furthermore, in passing from country to country, opportunity is offered for imparting a good deal of miscellaneous information as to customs and relations which it is desirable to have, but which does not seem to fall under other headings.

Value in connexion with history

General interest

Far more important than these considerations—which, after all, can never be more than subsidiary—is the employment of geography so far as possible as a means of training the observation, and a part of the general educational discipline. It is probably in relation to these points that many educational authorities have felt the greatest difficulty when called on to assign to it its position in school and other

The value in educational training

courses; and many are the efforts which have been made to introduce satisfactory methods of instruction. To take the training of the observation. The personal study of the features of local geography (*Heimatskunde*) has been developed in the primary schools of other countries, and might be advantageously pursued in those of our own country, and with still greater effect in the junior classes of higher grade and secondary schools. A like result may be obtained, in part, from a systematic attention to the natural features which diversify the face of the globe—best carried out, no doubt, in the case of young students, by the use of raised maps.

Postponing any further discussion of such methods and their use, let us turn to the wider matter of the character of the mental education to be obtained from the study of this subject.

Its nature as a training

Physiography

Some recognition of the necessity of such an aspect is seen in the development of physiography, which may be described as the systematisation of a disconnected physical geography, and which seeks to answer the specific inquiry as to how the earth and the forces now affecting it came to be what they are. In framing its answer it has laid many sciences—notably geology and physics—under contribution, giving the sequence of events, cause and effect, whereby the various phenomena which we can observe and describe have grown into their present state—sometimes, no doubt, having to piece out knowledge of what has been by conflicting theories as to what may have been. Be this as it may, the aim has been to exhibit and trace the sequence of events and their inevitable movement, affording at once a unity and a means of discipline.

But, close akin to geography though such a study obviously is, it is rather complementary to it than to be confused with it; or, to put the matter in other words, it might be said that geography begins very much where physiography ends.

Distinction between physiography and geography

The former, indeed, has a different task to fulfil and a different inquiry to answer. While physiography teaches us how the earth came to be what it is, geography describes what it is, and strives to answer the inquiry as to what are the effects of its features, forces, and other characteristics upon the various peoples inhabiting its surface. In following out such a subject as this, it is necessary very often to revert to physiographical considerations and chains of growth; and it is hard to draw a line which shall clearly and definitely demarcate the boundaries of each study. But this is no new thing. A like difficulty is encountered in the analogous case of history, where

we follow the historical development of a country or nation, and have to bear in mind constant relationships with anthropology and physiological growth.

Geography is physiographical so far as the description of existing physical features is concerned; but such descriptive physical geography must be distinguished from the study of the various forces which made these physical features what they are.

Main character of geography

Geography can be described as the meaning to man of the earth and its features as they are. Thus, in the geographical treatment of any country, we have to know both its general political condition—to use the word political in its geographical meaning—and its main existing physical and semi-physical features, the latter expression being used to cover features partly political in character and partly due to political causes. Thus artificial harbours, canals, and similar phenomena must be treated alongside of natural harbours, navigable rivers, and the like. In considering the effect of these, of whatever kind they are, on the various nations and races, it is necessary to remember that there are other influences of equal importance, and this is or should be a reason for a close connexion between the studies of history and geography, which stand very nearly related to one another. Geography must take notice of many developments narrated in history; history must not forget the important effect of geographical conditions and surroundings.

Let us see by what methods geography as delineated above can be most profitably approached.

Methods of teaching

Though many of the matters touched on can be best taught to older pupils, there is abundant opportunity for intelligent instruction in the youngest classes. The great danger to guard against is the degeneration of the geography lesson into a mere repetition of lists of names of towns and natural features learnt by rote. Even in respect of the accumulation of *data*, learning by rote without a system of classification is a waste of time. A knowledge, for instance, of the watersheds of a country, considered systematically, and with reference to other physical features, is not only valuable from a higher point of view, but useful as enabling the memory to retain with less effort a large number of facts. Teaching geography, as distinct from *hearing* a geography lesson, consists in indicating, and, when necessary, enforcing with illustrations from other countries and continents, connexions such as these. In addition, the young student requires to be made to realise the nature of the different features referred

to. One instance will suffice. In reading military campaigns pupils are often puzzled by the slow progress of an army, more puzzled, probably, by the seemingly extravagant praise lavished on the accomplishment of distances which seem slight by the side of walks they have taken themselves. Probably they think of an army corps as advancing two and two along a good level road. Now, apart from the exigencies of a military march, which require to be emphasised, want of observation and teaching leads them to attach quite inadequate weight to the various natural obstacles which impede progress. In a general and abstract way they admit that forests, hills, streams, and rivers are obstacles, but in most cases the admission does not proceed from realisation. To overcome this and other difficulties (for illustrations could easily be multiplied), the faculty of observation requires to be trained. In some instances, and especially in the country, this can be done by the study of local geography (*Heimatskunde*). To be of real service, such a study must be carried out systematically, and its results applied to geographical questions outside the students' observation; otherwise it may become a mere amusement, or even a waste of time in something which is neither play nor work. But under a teacher who really understands his subject there is no danger of this. Children will be taught first to know natural features, and to recognise their importance; then, by making maps of the locality thus studied, to realise them when put in black and white. Possibly the shading of a mountain range will cease to be a matter of mere artistic interest. They may go further. They can learn something of the importance to their own district of its means of communication with other districts and localities, the nature of these various means of communication, and something of the true meaning to human beings of these and other natural and produced geographical features. Where the study of local features is impossible, or where its utility is exhausted, as will soon prove to be the case, recourse can be had to raised maps, of which every school should possess some specimens. They teach on an extended scale and with great clearness the lessons spoken of above. In a well-considered scheme they should be placed before pupils who have already been taught to observe the nature of the features of their own locality, as these will be best able to recognise the actual meaning of the configuration. It is not, of course, necessary that the geography of every country should be taught by reference

The realisation of geographical features

How attained

The importance of such facts

to raised maps. They exist as a means to an end—that is, to the intelligent appreciation of the various natural features. That attained in a general sense, a well-drawn and well-shaded map will furnish all necessary assistance. Just as the actual study of local surroundings leads up to the raised map, the use of the latter should fit the student to understand his atlas. The teacher must be careful to guard his class from forming wrong impressions through failure to understand the scale of such maps.

In the meantime, care should be taken to utilise the various opportunities which offer themselves of stimulating a vivid interest in the habits of the country under consideration, and developing the imagination by the accounts of discovery. In the story of exploration and settlement, the two elements of imaginative adventure and gradual material development meet and afford a happy ground for at once training and stimulating the mind. In such ways, it is hardly necessary to say, the actual acquirement of much detailed knowledge is greatly facilitated and deprived of the painfully mechanical aspect it often wears. Australian geography, for instance, loses much of its dull character if side by side with the study of the present characteristics of the country is placed the brilliant history of the various explorations.

Up to the present we have been dealing in the main with the best means of securing a knowledge of the geographical facts of a country, and of understanding their value, the former being often emphasised by drawing maps.

The effect of geographical features to be studied

More advanced teaching, while continuing in these directions, goes much further. Partly on the basis already acquired, partly in conjunction with the maintenance of the lines of study already indicated, attention should be drawn to the ways in which geographical features, forces, and conditions have affected and affect man. In this second stage of teaching two ways of reaching the desired end offer themselves. While teaching the geography of one country, the teacher, when any important feature is touched upon, should direct his class to like features in other countries, and call for information as to their effect in these instances. To take an example: the mention of the Pyrenees as forming the frontier between France and Spain opens the way to the consideration of other mountain ranges lying between different countries, and to a general view of the importance of mountains in military geography and foreign politics. In a similar manner, forests, rivers, seas, and other features call for a reference to analogy. Again, the climatic

influence of winds in the case of South America introduces another subject.

Not only is some idea thus formed of the comparative condition of the various countries in these particulars, but an opening is made for a fuller and more minute investigation into the consequences of the chief features. This may now be followed out. The chief features and forces may be taken in turn and scrutinised. In this way the pupil will be forced to take what may be called a thoroughly intelligent view of geography. He has to consider not merely what rivers a country possesses, not merely what countries have good sea frontiers, but what is the importance of rivers, what that of a sea frontier. Take the case of rivers; here the pupil, starting either from the consideration of the river system of one country or from the subject of rivers as a general heading, will trace the varying importance which a river has borne in ancient and modern times. First tracing the early course of the growth of towns on what seemed at one time the main open way of communication within a country, he will come to consider the case of those countries which have suffered under a water system naturally defective; he will see how such have sought to make good their deficiencies by canals. Ancient and modern systems of canals require notice. But they serve other purposes besides those of communication. Their effect on agriculture, by performing the work of irrigation, as in India, opens up another line of thought. Again, the utilisation of water-power in manufacture, which largely accounted in England for the rapid growth of the cloth industry in the West Riding of Yorkshire, and which is still of importance in a country like Canada, calls for notice. Finally, the present lessened importance of a water system in certain of these particulars will be shown to be due to the railways and the use of steam in manufacture.

These considerations are not only valuable in themselves, but they invest with a vivid importance the physical causes which bring the rivers into being and direct their course.

If we were to take a subject, so hackneyed and yet so delightfully vague in general conversation, as the importance to a country of proximity to the sea, we should see that it admits in part of very definite, very concrete, and very instructive treatment. It undeniably affects a country in its means of foreign communication and in its climate. In the first instance, it is necessary to consider how far that proximity is real. Is there a good coast-line? Are there good ports? What goods are exported and imported at the

ports? Is the country in the neighbourhood of such ports highly developed? How are the ports connected with the land in the far interior? In the second instance, the action of the winds and the position of mountain ranges must be taken into account, and viewed as producing certain climatic effects in conjunction with the sea.

It is well to emphasise the difference between the kind of teaching thus suggested and the vague and unsatisfactory generalisations which pass current and seek to explain the present condition of mankind by reference to a few simple geographical features. The teacher must teach his class to study and compare facts in such a way that observed or ascertained *data* will be brought together to serve as a basis for a few simple, concrete generalisations. Moreover, it should not be the aim of the teacher to do more than point out the observed results of the phenomena in question; least of all should he seek to philosophise over geographical causes in a general and amateurish way.

In higher and still more advanced classes the knowledge of fact and principle already acquired may be turned to further uses.

Geographical causes of economic developments

Here the question will arise as to the causes, so far as these are geographical, which underlie the different development of the various countries and districts. Pupils must be led to inquire why one country is chiefly engaged in manufacture, another in commerce, another in agriculture, and so forth. First of all, some trouble should be taken to discuss and consider the main conditions allowing of favourable development in these directions. Thus, in the case of manufacture attention must be drawn to climatic conditions allowing of regular labour, to natural dexterity and working skill, to the possession of coal and of iron, and, lastly, to the existence of coal and iron in reasonable proximity. A similar enumeration of conditions will be made in the case of commerce and of agriculture; while, in a somewhat like manner, the circumstances which guarantee a strong military or naval position must be passed in review. This done, the class is ready to appreciate more fully the geographical detail and facts of the different countries. The facts learned before will be revised and added to, the whole being grouped more intelligently. Further, just as the various conditions which facilitate the general growth of a country are noted, the specific circumstances leading to the development of particular occupations, as the cloth and cotton industries, require attention. But here—as, indeed, elsewhere—it will often be necessary to

explain that manufactures linger on and flourish when once founded, even though the causes conducing originally to their rise have vanished. Often it will be necessary to leave the growth of industries and towns, and other economic or so-called political features, frankly unexplained. The great need is, so far as possible, to make the geography of a country a subject of intelligent and intelligible instead of mechanical study.

Stages of geographical teaching

According to the suggestions thus made, geography will be taught in three stages. In the first, the class while learning the geographical features and conditions of a country should be taught by various methods to realise their nature. In the second, a step in advance is made, and the meaning to man and the various races becomes the chief aim; of course this may proceed concurrently with the ordinary study of certain countries, which, if judiciously chosen and classified, will serve as admirable illustrations of the principles which have to be enforced. While in the third, the work of the teacher will be to classify and rearrange the knowledge previously gained and the principles enforced in such a way as to make a new and intelligible whole.

A scheme such as the above, consisting largely as it does in carefully graduated courses, may present difficulties to those whose geographical study has taken the form of a rapid passage through the various countries, first in an elementary fashion, and then in a more thorough way, many details previously omitted being thrown in. But there is really no difficulty at all save that necessarily involved in introducing a change in method. During the first of the three stages the pupils starting from the United Kingdom should take in turn the various countries, meantime being taught both by the study of the district and by the use of other means at the disposal of the teacher to realise the actual meaning of the various physical features about which they learn. A lump of modelling clay in intelligent hands can work wonders. The second stage might open with a brief review of the preceding, with the object of impressing on the pupils the variety of conditions and influences affecting different countries, a bird's-eye view, in fact, of the world, after which the chief features, as mountains, sea coast, rivers, woods, and others would be taken separately as described above, to be followed by a consideration of the leading geographical conditions on which commercial, manufacturing, agricultural, and pastoral development respectively depend. In both cases the teacher not only makes demands on the knowledge of the class

previously acquired but adds to it. The third stage, like the first, consists largely in the study of various countries, but a study conducted very differently and based on the courses which have preceded. England, France, and the other countries both of Europe and the other continents form once more the object of attention, but this time they are to be considered with definite reference to the geographical causes which have affected their growth and made them what they are.

The nature of geography

Two points need emphasis. On the one hand it is the leading characteristic of such a study to lay stress on *the meaning to man* of the various geographical features, in place of treating physiographical details and principles as of the chief importance. These have their place. They have their own use, but in the study of geography as thus conceived they are useful as leading up to the principal consideration. At the same time it is probable that their own importance will be better realised by students who have learned the vital human importance of the features and forces brought into being in their course. On the other hand, the close connexion in school study between geography and history becomes evident. They deal with problems intimately connected. They are mutually necessary to each other, and while it is true that the historian should be something of a geographer, it is equally true that the geographer should be something, or more than something, of a historian.

Close connexion with history

Maps and their uses

Maps and map-making form valuable adjuncts to real teaching. So far as the general use of maps is concerned little need be added to what has been said, beyond the general remark that they should be used as much and as often as possible. But the drawing of maps by the pupils requires more notice. As a rule it is regarded as a means of assisting the memory to retain the various geographical facts of the particular country, and this no doubt is quite right so long as due regard is paid to the very varying importance of these. Neatness of execution, the introduction of many details, correctness of outline, are all matters to be observed, but the fundamental task is the intelligent rendering of the general configuration of the country. This with its meaning is what the student has to observe and study, and this also is what he must represent in his map in such a way that the meaning may be readily perceived. To attain this a class must be made to study the map of one or a few countries intently and repeatedly. The construction of maps of all the countries of Europe in an essentially slipshod though artistic fashion means but little, whereas one map

well drawn, with its more important features duly emphasised, is a considerable achievement. Most of the advantages offered by such a system as the former can be gained by making the student fill in details on an outline map, while the time thus saved can be more advantageously employed in making him draw and redraw the map of one country. But, of course, this will not be done without direction and trouble on the part of the teacher. Should time permit, an elementary knowledge of scientific cartography might be imparted, as it will prove an assistance to accuracy.

The various branches of geography

The attempt to distinguish between various branches of geography is undesirable so far as kind is concerned, though true enough with regard to specific aspects or applications of the subject. Political geography, commercial geography, military geography, and historical geography are useful terms if by them is meant nothing more than the emphasising of particular developments; but it must be borne in mind that they rank alongside and are inextricably connected. They are all included in the general geography which should form the subject of instruction. To which particular aspect a large share of the attention of the student should be directed depends on the character of the various other studies included in the curriculum. The method and main outlines of teaching remain the same. This much may be said. No one branch must occupy the time available for geography to the entire exclusion of the others. Further, as a general rule, the more specialised study of any one should be reserved for senior classes. Thus older pupils on the classical side of a school will devote their attention mainly to ancient geography, using in their study of this the methods previously acquired, while in a commercial school the commercial and economic aspect will receive most notice, and to take a third order of pupil, those whose interests are chiefly with modern, though not necessarily commercial, studies will be occupied during their final years with modern historical geography.

The difficulty at present does not lie, however, in the exclusive selection of some one or other branch, but in the position into which the geography lesson has been allowed to sink. Instead of being the opportunity for liberal, vivid, and intelligent instruction, it has degenerated too often into nothing more than the mere hearing of a task got by rote, and the difference between the teacher and the taught consists in little more than the wider general experience of the former, together with the very important fact that he has the book open and the student has not. It is true that

many existing text-books are wanting in various ways, but the principal fault lies with the teacher, or rather with the want of provision for the intelligent study of geography by those who afterwards have to teach it. The higher study of geography is neglected to an almost incredible extent. Given an improvement in the position assigned to geography in school courses, and in the character of the study demanded, it may be hoped that there will be some fuller university recognition of the subject, and then the text-book will be relegated to its proper place. No text-book, however good, can supply the place of vigorous personal teaching.

E. C. K. GONNER.

CLASSICAL TEACHING

Introduction

SOME words of preface are necessary if the reader is to be made acquainted with the exact point of view from which the following suggestions as to classical teaching are made. It was remarked about thirty years ago by a candid critic of English educational methods, that no one was in a position to answer the question whether boys learnt the ancient languages in order to read them, or read them in order to learn them. That is to say, are they to be treated as a gymnastic of the mind, or is the aim to elevate and purify the intelligence by a close study of the greatest writers of antiquity? Unless some answer to this question is given, it may easily be that suggestions are made with one object in view and criticised as if a wholly different purpose were intended.

What is the true defence of classical instruction?

It may at once be said that the orthodox defence of classical training is rested on the incomparable beauty of the great masterpieces, and is generally undertaken by men who have advanced to the point of being able to sink into the meaning of the writings and gain great delight from a rapid perusal. The idea seems to be that a ripe scholar is the best judge of the value of this training; and this is indisputable if the training is intended to make ripe scholars. But when closely questioned, no advocate of classics ever professes that this is really the object in view for the mass of boys. Many a score of our pupils leave off too young to get even a glimpse of the beauties of any authors they read; many a score besides go on long enough to find that the taste for such reading has been denied them. And yet we cling to Latin for all and Greek for some, while the evidences of failure in this particular attempt are growing more frequent and convincing than ever. It is not only that a large number cease

their classical studies early, but that those who sometimes continue them are affected by two powerful influences, and by both in an unsatisfactory way. I allude to the system of scholarships and the nature of the teaching. The former is an expensive method of painfully counteracting the tendency of a mercantile community to replace education by the high stool at the age of sixteen. Boys are induced by pecuniary prizes to go on reading the classics till they are twenty-two years old. But it is obvious that the very last thing likely to be encouraged by this means is literary enthusiasm. The second influence—the nature of the teaching—will be understood if we consider the conditions under which a teacher in a secondary school sets about his work, and what that work exactly is.

Not the literary enthusiasm excited in the mass of boys

Assuming, what can hardly be doubted, that for the majority of honour men the fact of an ever-impending examination is inimical to love of classics for their own sake, we shall agree that for this love to grow, the opportunity of reading should be given after the B.A. degree is taken. Then a young Englishman is just at the time when his intellectual growth is likely to be most vigorous and his mental horizon to expand most wholesomely if a favourable environment is allowed. But this is exactly what to nearly every young schoolmaster is denied. He is obliged to begin work at once, and what he requires is high work, some leisure, and a good deal of supervision. He is set down to the lowest form in the school to teach the rudiments; he has very little leisure and no supervision. One thing of which he is absolutely innocent is a knowledge of method. He is therefore told to teach young boys, where a knowledge of method is essential, and where mistakes are most disastrous. If he had been given a high form and some leisure, he could have gone on enriching his own mind just when in all his life he was most eager to do so; and the love of classics for their own sake which might thus have been fostered he would anyhow have a chance of imparting to boys who were old enough to understand it. To guard against any risk of this he is not allowed to come in contact in school work with the elder boys at all. If he is a man with energy to spare, he spends it on the hundred and one activities of school life which—especially in a boarding school—soon absorb all his time. And when, after many years, he slowly makes his way to the upper divisions of the school, he has not kept up or renewed his taste for classics, he has gradually and painfully learnt

The system damps intellectual enthusiasm in the teacher

methods which suit small boys but depress elder ones, he is forty-five years old, married, keeps a house, plays golf, and sits on numberless committees. It is not surprising if, though he is looked on as a most useful master, teaching has become to him a minor interest, and all power of waking enthusiasm for classics has died away. All this might have been prevented if he had begun with a high form and gradually risen to the more important work of faithfully teaching a low one. But the present ridiculous system has one argument in its favour to which it is hard to find an answer. It exists ; and it will be some time yet before it is reversed or even seriously modified.

Ignoring, however, all other results of this state of things, we can discern one effect on classical teaching which is directly connected with our subject. Since the specially needed opportunities for growth and expansion have been denied him, the teacher imports his undergraduate hopes and aims into his work of teaching. He was infected a year or two ago with the necessity of 'knowing' his books, and so he goes on working at school trying to provide that his pupils shall know something after a given period of his teaching. As he had examinations in front of him, so they have examinations in front of them, and it is impossible for him not to be haunted by the idea that the boys must at all costs be able to produce in a few weeks something like a translation of a piece of Latin and Greek, and some knowledge of grammatical forms as well.

Fortunately, this idea is not so far removed from the truth as to prevent an active teacher, while following it out, from hitting upon many good methods. And yet it can hardly be doubted that his teaching and his attitude towards the question of classics and their place in education, and his idea as to what is the exact object of his daily work, would be more consistent and reasonable if there were some nearer approach to a consensus among authorities as to the reasons why classics are still read at all. To be told by great scholars and historians that our civilisation, philosophy, and art date from Pericles, or that the imbuing of the expanding intelligence with the glorious fruits of the Augustan age is the finest effort of pædagogy, is a dismal mockery for a raw and untrained schoolmaster whose pupils are going into Sandhurst at seventeen, or to Ceylon at sixteen. No wonder that secret scepticism tells upon his energy. He perhaps stops in his weariness to fortify himself with some finely written defence of classics, and finds nothing in it but a catena of bewildering anachronisms.

Cannot something be done towards suggesting a true and intelligible reason for boys to work at classics, even though nine tenths of them are never to be scholars?

Putting it quite briefly, the learning of these ancient languages in its earlier stages affords an opportunity for training in precision of thought, memory, inference, and accuracy; in its later stages it is capable of enriching the mind with noble ideas. The aim of the school is therefore to instruct till the ages of sixteen or seventeen in such a way as to secure the earlier benefits, if boys leave then, while gradually paving the way for the later benefits in case the study continues to the University. It is quite possible to pass gently from one set of aims to the other as the boys grow in years, and the renunciation of the later stages need not impair the earlier.

A better reason for classics is the gymnastic they afford

If there had not been in the study of these languages some peculiar quality which braces the faculties of the learners, and had the practice of beginning Latin and Greek in early boyhood rested upon the orthodox reasons alone, it may quite safely be said that classics would long ago have been restricted to a small *coterie* of scholars. But it has been found that teachers, with whatever opinions they have embarked on their task, have been forced to acknowledge that the failure to stimulate love of literature by means of Latin and Greek has been to some extent compensated for by the admirable tonic virtue which resides in these languages owing to the fact that they are no longer spoken as they have been written. It cannot be denied that in even the early stages of translation into Latin from English the pupil constantly has to think deeply into the meaning of an expression for which in French or German he would find in the dictionary an almost exact equivalent. This characteristic, combined with others more generally recognised, has enabled the study of Latin to survive the heavy assaults of the last half-century. People go on defending it as though it could turn business men into *littérateurs*: it can do and has done nothing of the kind, but it is an unrivalled instrument for stimulating the reasoning faculties at an age in which their very existence might almost seem open to doubt.

Which of these two objects should be kept in view by the teacher?

These facts afford us an answer to a very perplexing question. In the case of two boys, one of whom is to cease school studies at sixteen and the other at twenty-two, ought the methods of teaching and the subjects chosen to be the same? The opinion of the Royal Commissioners of 1869 seems to have been that both teaching and subjects

should vary, and at first sight it would seem that it is so. If there is to be no teaching after sixteen, would it not be wise to curtail the number of subjects, and also to aim at something like completeness in each, so that the pupil shall leave school with, at any rate, some secure knowledge of something, instead of a fragmentary knowledge of the elements of some half-dozen subjects?

Whatever might be thought of this reasoning, the practical difficulties in the way of acting upon it would soon be found insuperable. At the time when boys in secondary schools begin their school studies, nobody knows at all clearly at what stage they will leave off. Plans have to be made according to circumstances, the rate of progress in a few years from the start will affect the question, and so on. But there is an assumption underlying the idea which ought not to be allowed to remain unquestioned. It is the familiar dogma that education is simply the imparting of distinct pieces of 'information,' to use a word which has been sadly narrowed down from the meaning of its Latin parent; and this dogma we find in the case of classical teaching of a mass of boys to be manifestly inapplicable. Unless there is a virtue in classical training independent of the knowledge gained of the languages, the benefit from the training is wholly inadequate to compensate for one-fifth of the trouble taken. If, however, there be a peculiarly efficacious power in these languages to strengthen the reasoning faculties, and to impart a sense of meaning as distinguished from a linguistic knack, then it is undeniable that the best methods possible are those which bring this power of Latin and Greek into play upon the young student's mind, no matter how long or how short be the time at his command. It seems, therefore, that while we are restricted to a certain educational practice, we are fortunately carrying out the dictates of educational theory.

The gymnastic quality of classics forbids short cuts

The same consideration allows us to feel easy under the repeated assaults of those who may be termed modernisers of the classics, that is, those critics of academical methods, who wish Latin and Greek still to be taught, but in a fashion assimilated to that in which an Englishman learns a foreign language abroad by conversation, by vocabularies learnt by heart, by every sort of short cut to the desired goal, namely, a power of *using* the language, no matter how it has been acquired. These recommendations militate against our main principle, that in the learning of an unspoken language a special virtue resides. If the object were to learn Latin and Greek simply to read them, or to write prose and verse

simply to convey ideas to the reader, then we should all agree that every possible facility should be given to the student. To adopt a metaphor from another science, whenever a check occurred we should 'lift the scent,' being only intent on securing our prey. But having agreed on the method of using short cuts, we should still have to face the fact that with all our pains many boys leave off too soon, and many others fail to get on far enough to *use* the languages to any purpose; and in the case of all these the benefits of careful training would be sacrificed to secure a fluency which never comes—a most unsatisfactory result. And even if it did come, a great deal of the object aimed at is illusory. We do not want Latin, as we want French, as a medium of communication with other people. We should, in short, have given up a great deal in learning Latin conversationally in order to converse in it; but many would fail in the attempt, and those who succeeded would find it was no use.

So much it has seemed necessary to say in order to make clear in what sense the present practice of learning classics may be defended. They are for all boys a gymnastic of the very best kind, and for the select minority they are a great deal more.

Why not, then, leave all difficulties to the learner?

But there is a qualification required at this point, without which the reader of the following suggestions might very well suppose that as the object of Latin and Greek is training, the soundest method of teaching would be to remove no difficulties, leave the learner to do everything himself, banish Liddell and Scott, and go back to Hæsychius, and then stoutly resist any change which tends to lighten the tedium of the uphill road. Some such position has been frequently adopted since 1825, when Sydney Smith wrote a brilliant article on a certain proposal made for the purpose of simplifying the early difficulties in the study of Latin. To the familiar objection that it was injurious to the pupil to remove difficulties, he answered that you might just as well say that the effect of Mr. Macadam's new roads would be to make the horses fat! It is necessary to remember that though we retain these languages in the case of most boys as a means of exercising the mental faculties, yet this object itself will not be attained unless the learner is spared the discouragement which waits upon long-retarded progress. That is to say, there is a point beyond which the difficulties must not be permitted to block the way: if they are, the sense of vigour and growth which comes from successfully overcoming them and going forward is lost in an overpowering

conviction that in spite of all the toil no real advance is being made. In physical exercises this principle is universally admitted, but it is very commonly ignored in the case of Latin and Greek. The real central problem for the teacher is to determine, by vigilant attention to the calibre of each of his pupils, when and for how long the wrestling with difficulties should be insisted on, and when the time has come for adding the stimulus of *interest* to that of duly recognised effort. For it is certain that if the pupil, with the aid of this fresh stimulus, is enabled to advance, there remains still before him a batch of fresh problems to be grappled with, amply sufficient to stretch his strength to the utmost.

The idea of classical training, which forms the principle on which the following suggestions are based, is now fairly plain. It is, that while an enthusiastic defence of these two grand languages has often been splendidly uttered by ripe scholars, the arguments advanced have never been relevant to more than a minority of the pupils concerned, but that for them they retain all their pristine force. For the mass, however, of those who are made to labour at the earlier stages, a new benefit has been found, of which the original promoters of classical training probably never dreamed, in the special power of discipline—the characteristic of an unspoken language. But to insure that the discipline shall not be merely repressive, it is necessary to combine the stimulus of interest and progress with subjection to the stern demands of logic, law, and analysis.

Methods for Teaching Classics

The following suggestions will mainly have reference to ordinary secondary schools at which boys are taught from the ages of thirteen to seventeen or eighteen, or even in some cases to nineteen. It is generally assumed that the forms number between twenty and thirty, and that the average amount of time devoted to Latin and Greek is about sixteen or seventeen hours a week, though probably if both these conditions were somewhat modified the conclusions arrived at with regard to different methods would remain for the most part unaffected.

Grammar teaching

Grammar Teaching.—As a general rule this is quite the first beginning of the learning of Latin and Greek. The fashion is to begin Latin at about nine years of age, Greek at about twelve; but, in both, the learning by heart of grammatical forms constitutes the earliest lessons. Formerly we

embarked on Latin rules for syntax and the formation of tenses. Nowadays, the rules are in simple and lucid English, but still the chief question to be settled is whether it is sound training for a pupil to learn a declension by heart, and then apply it along with a simple verb in turning a sentence, or, as in learning a modern language, to catch the simple sentences first by ear, and then draw out the grammar rules from them. Ideally, there should be as little as possible of learning by heart unaccompanied by the immediate application of the knowledge. As soon as the simplest forms of verb and the present tense of one conjugation are mastered, the pupil should be set to use his knowledge by writing sentences constructed so as to bring in exactly what he has learnt.

At a later stage a few more tenses in the regular verbs will be added and at once applied, and for the present the conjunctives will be omitted. Every care will be taken to make the initial knowledge perfectly sound and available, the grammatical forms learnt by heart being never in advance of the sentences that are being turned.

But, in spite of all precautions, a certain amount of effort is required to insure that the too treacherous memory shall not speedily lose what it has so painfully acquired. It will often be necessary to test the knowledge of grammar by question and answer. This can be done with little expenditure of time by setting three or four questions constantly, towards the end of a construing lesson; having the answers in one word written down at once; making the boys exchange papers with their neighbours, and take pencils in place of pens, or *vice versa*, to alter and mark the answers. Or, where places are taken, boys can be taught to shift their places without confusion, those with correct answers going above the failures each time, and numbering off at the end.

The same end will be attained by having grammar repetitions; but it is not difficult to overdo these. If it be found that the boy's knowledge is very weak in spite of repeated learning, it means that he is being asked for grammatical forms which he is not ordinarily using, or else that his capacity for grammar analysis is extraordinarily weak. In either case the cure ought to be more constant use, since this enabled him once to master English grammar, together with as much *viva voce* teaching as possible, some ordinary phrases being habitually turned into Latin by the teacher and employed day after day.

The beginnings of syntax demand the greatest care and very full exposition. The pupils should make out the rules from the

examples, instead of learning the rules first by heart, then the examples. There is, however, considerable practical difficulty in carrying this out, especially in large classes, where some of the boys have previously learnt the rules parrot-wise sufficiently well to be able to produce the formula ready-made when they ought to be thinking it out. It could, however, be done far more frequently than it is done, especially with such rules as that of the sequence of tenses, and the simpler forms of conditional sentence. It will generally be found, when bewilderment exists in respect of any Latin syntax rules, that the mind does not clearly apprehend the difference as to the *time* referred to by the corresponding English forms. Every sort of ingenious device for testing this should be employed—*e.g.* framing of simple or comic sentences with vivid meanings, so that the time referred to may be obvious enough at first, then more ambiguous. The ground should be gone over again and again in English till this difficulty is thoroughly overcome; this will probably require small classes or little groups of three or four at a time, and, indeed, for any thorough teaching of syntax, no less careful grouping of the pupils is necessary than for mathematics. After some exposition, a few boys at a time may be set down to distinguish the time referred to in any particular conditional clause by adding the words 'ten years hence,' 'now,' or 'ten years ago,' making the requisite modifications in the English. When this is quite mastered the pupil is ready to grapple with the equivalent Latin or Greek forms. In some such way different groups can be employed while others are being instructed in a different part of the subject *viva voce*.

Syntax

It is useful to examine a whole school in grammar by a long paper of questions, set twice or thrice a year and marked high. A temptation which easily besets an examiner is to set questions on recondite forms which happen to be included in the lists in the book, such as the comparative of ἀφῆλιξ or the perfect of βλώσκω; meantime, it is forgotten that what is required is thorough familiarity with the inflection and formation of *ordinary* words, and that it is useless to tax the memory with such as are scarcely ever met with in the best-known authors. This, however, does not apply to syntax rules; while some are more useful than others, all are good for learning if the pupil is led up to them through the examples.

The time devoted to a construing lesson varies in different schools, and with different boys in the same school. It has been found that with boys who are mainly under fifteen no subject which is of the nature of instruction can hold their interest for a

full hour. And if the construing lesson is for only three-quarters of an hour, it is best to divide the time carefully. There will first be some questions to be answered on paper, either parsing or recapitulating something which the pupils were told last time; then the construing, varied now and then by some talk about the subject matter; and at the end some questions on grammar or subject matter for the boys to take away with them and remember next time. The object of these questions is to train the memory by exercising it for a longer period of time than is given by the preparation of the lesson. The pupils ought to know that unless they can at once give the answers on Tuesday to questions which they learnt on Saturday they will lose places or marks. As in other cases, it will save time if they correct their own or their neighbours' sentences, the master reading out the correct answer, which ought, as far as possible, to be of one word. Also the precaution of having answers written in ink and corrected in pencil, and the papers shown up, to be checked by the master, will be found indispensable, to prevent all temptation to fraud.

Construing lessons, place-taking, and marking

In view of these questions, and for many other reasons (for clearness, accuracy, and saving of time), the master should know beforehand what he is going to say, and should insist on its being learnt. There should be as little as possible of sporadic information simply uttered as if the master wished to show that he knows the subject. That is invariably the opportunity seized by the inattentive to let their thoughts wander far and wide. The pupils should be made to feel that when the teacher tells them anything, it is to be taken in, and will probably have to be reproduced. On the other hand, if time allows, it is good for a teacher to expatiate a little on matters where his own interest is keen, provided that he is sure that he can excite the boys' interest. Discursive exposition which does not excite interest is a very poor form of teaching. If the teacher's remarks cannot always be interesting, they can be solid, precise, and well measured, and such as the boys can listen to with the feeling that the information must not be allowed to trickle away in a few minutes from their minds.

The question of how far to dwell upon subject matter, as apart from language, is to be regulated by the broad principle that the younger the pupils are, the less time is to be given to the former and the more to the latter. A sixth form reading Thucydides should be stirred up to think much of the narrative, and the political lessons to be drawn from it. But a lower middle form

reading Xenophon's 'Anabasis' will be occupied mainly with the language. And yet, at the beginning of term, and occasionally throughout, it is well to bring clearly before them, by maps, drawings, &c., the fact of which they are slow to take cognisance —that a real army with a real purpose in view did march once through the uplands of Asia Minor, and that Xenophon, who accompanied them, wrote the very account which the boys are beginning to read. Every effort should be made to undermine their rooted conviction that what they read in Latin and Greek has not, and never has had, any connexion with facts of life. For this purpose, some acquaintance on their part with Greek and Latin mythology and history is very necessary. It can be insured by their reading as an 'extra' books like Church's 'Stories from Homer,' &c. (as well as by ordinary history lessons), and this reading may even be tested by an examination.

Next comes the question of marks and places, and its bearing on the boys' attention to the lesson. It is widely felt that for young boys—*i.e.* roughly, those in the large classes of a secondary school between fourteen and sixteen years old—taking places is almost indispensable. The risk of confusion and interruption is less serious than that of somnolence and stagnation among the tail end of the form. And there are two methods of registering the result: one, the commoner, is to get the boys to number off, so that the top gets, say, twenty-five—the bottom, one. This method, it is true, seems to land the best workers at the top, and so far is satisfactory; but there is reason to believe that it discourages the dullest members of the form who have repeatedly to announce the single figure, about which there can be no delusion to buoy up their spirits in any way. The other method may be described as circular: each boy starts with ten marks in hand, and he takes places or loses them without reference to any top or bottom of the form, simply moving up or down, and then adds to or subtracts the result from ten. In the long run this of course penalises the slow, but it takes them a long time to find out that things are going steadily against them, and it is thought that they continue to work with rather more zest in consequence.

During the construing lesson, the chief problem is to keep up the attention of all the form throughout the time. It may be laid down as axiomatic that this cannot be done for many days together with English boys between fourteen and seventeen in a classical lesson by means of the interest of the subject alone. Experience goes to show that if more than a select few are to be made to use

their brains throughout, it must be by means of the stimulus of marks and promotion. This points to a careful system of asking questions to secure that as fair a chance of a rise as is possible be given to all the class. But a risk has to be faced. It is quite possible to ply a portion of the form with a question passed on from one boy to the next, in such a way that quite half of those present can calculate with certainty on their not being disturbed without long notice. The result for them is a disastrous lethargy. To meet this difficulty, questions should be passed with rapidity; and although succession must be generally observed, it is most advisable every now and then to launch an unexpected question full into the undisturbed portion of the class, so that no boy can at any time feel safe in resigning himself to quiescence.

Again, any chance of unfairness must be avoided. It frequently happens that a question, perhaps rather too hard for the form, is being passed down, and one boy will hazard an answer which, though wrong, is somewhere near right, and gives a pretty clear hint of the right answer to those below him. If after this some one guesses it, it is manifestly inequitable if he is allowed to go up very far above the rival who was sharp enough to approximate to the right answer unaided. The best way is to send him up four or six places instead of ten or fourteen; or so as to take down all those below the guesser whose attempt might have enlightened them.

In the event of a lesson not producing enough questions to fairly test the form, it is advisable to postpone the numbering off till the next lesson is completed. As regards individuals, the master should notice when a boy construing is taken down four or five places, and unless he 'turns' him he should then let him stop. If the boy is allowed to go much lower he gets first discouraged, then desperate, and his work, under a sense of prolonged adversity, will certainly suffer.

Printed notes

The question of printed notes demands more attention than it has yet received. It is agreed that unnecessary help is injurious to a learner trying to grapple with the difficulties of a Latin or Greek author. Yet when a whole class is provided with the same annotated edition of a classical author, it is perfectly certain that the notes will be too full for the best boys, too scanty for the dullards; and in all but the very largest schools there must be a great disparity between the top and bottom of any class. Again, there is the utmost divergence manifested even in

the best editions of school classics as to the kind of note provided for schoolboys. One editor gives the bald English equivalent; another a long disquisition on the syntax; another is equally full of archæological knowledge; another controverts previous editors; meantime nineteen boys out of twenty read nothing of all this except the English equivalent, and some are too lazy to do even that. As a general rule again no attempt is made to discriminate between the boys' needs and those of the teacher. To the latter, suggestive and complete information is well suited. To the former, it comes best if given for the first time by the teacher *viva voce*; if it is printed, a boy of fifteen will not read it. It seems again clear that as the grand difficulty most boys labour under in reading classics is to learn *how* to attack a complicated sentence, what is especially required in a note is to indicate this to them by questions and half hints, rather than by overt information, unless the passage is obviously too hard for the learners; just the sort of hints, in short, as a master would give if he were at the boy's elbow during preparation, and were careful to avoid telling too much. To these might be added very brief notices of facts suggested by the subject matter and necessary to its elucidation, especially if they are such as are not easily accessible to the teacher.

It will probably be admitted that very few school editions are from this point of view satisfactory, since most of them have been undertaken by scholars who, while exhibiting their own mastery of the subject, seem to have neglected the question how knowledge ought to be put before a young and somewhat half-hearted student. Hence, when suitable notes are not to be had, it is best to give the boys merely a text, and to supply the place of notes by oral assistance in the preparation of the lesson. This is difficult to do well, but may be productive of good results, and need not err by telling some of the pupils too much and others too little.

We will suppose a sentence which presents to the learner a bewildering tangle of symbols, to some of which he attaches no meaning, to others more or less indefinite meanings. If left to himself he will probably look out a few words, seize upon the first English equivalents, note them down, and pass on to the next sentence, heedless of the nebulous chaos he is leaving behind him. The master must vigorously combat this mechanical and indolent tendency, by persistently instilling into his mind the fact of the sentence being a perfect example of law and order, and he should indicate, first, the apparently legitimate ways of taking the clauses,

only hinting at the right one if he thinks the ambiguity too difficult for the class. The process can be carried on by dint of question and answer, and is found to be a stimulating form of teaching, probably because it is felt that attention given to it is likely to be rewarded later on.

Written notes

We have next to consider how far a classical form ought to be encouraged to make notes of their own. Here again any uncertainty as to the main objects in view will lead to a great waste of time. The teacher is confronted, as before, by the mechanical tendency of boys' efforts. They will take a great deal of trouble to set in motion every portion of their organisation except their brains. Hence it is easy to get them to write down copious notes of what they hear; and, of course, if an important examination is to be held to test their knowledge, they will diligently 'get up' these notes just before the paper, and speedily forget them afterwards when other interests begin to assert themselves. To combat this it is necessary to see clearly what purposes note-taking is meant to fulfil.

The purposes differ with different ages. With boys of ten to fourteen it may be broadly said that little practical benefit of any kind can be anticipated except that of learning to spell and write clearly; and these objects are best furthered by other means. The results on paper are too uncertain to form satisfactory material for the preparation for examination papers; and, of course, any condensation or analysis or rearrangement is, at this age, out of the question; besides which, the abortive attempts consume a great deal of time.

It seems best, therefore, to abandon the attempt altogether in the lowest forms of a big public school. A little higher up there should be a careful beginning, the master giving pretty frequent examples of how notes should be taken, and, if possible, casting an eye now and then over these early attempts and marking them. He should also give time in the middle of his remarks for the entry to be made; otherwise, at about fifteen years of age, the attention will be distracted from the subsequent bit of teaching, and the note entered will be valueless. The third stage is that of entering, without assistance or supervision, whatever the pupil thinks important, aided in his selection by an occasional hint from the master.

These notes are an aid to attention and to preparing for the examination; but it will be seen at once they are still purely

mechanical—that is, they are at best an attempt at fixing information and helping the memory. They do nothing to encourage habits of thought or precision of memory. This is to be aimed at in the last stage, at the age of seventeen or eighteen. There should be at this age a definite and persistent attack on boys' mechanical and thoughtless methods of getting through work; and, as part of that attack, all irrational and indolent note-taking must be discouraged. It is very difficult to get any but the minority to substitute any other, but those who do will be rewarded.

The best of all plans is for the learner to listen attentively to anything that is told him, and, instead of merely recording it in his note-book, to underline the passage with his pencil and write out the note in full in the evening of the day. This strengthens the memory, and also gives it precision, since any loose recollection of the teaching makes itself felt as soon as it has to be put into shape. It is certain that some such method as this is absolutely necessary to any profitable attendance at university lectures, unless, of course, the listeners write essays afterwards on the subjects to which they have listened. No other plan insures anything like assimilation; and the desire to let other people's knowledge trickle through the mind without any attempt at assimilation has never been commoner than at the present time, or more productive of sham and shallow learning.

Repetition

The learning to say by heart has always been a part of classical training. In the days of Comenius it was probably employed for the sake of storing the mind with the Latin authors, with a view to acquiring a vocabulary; as a secondary point it may have been defended as an exercise of memory. During the present century it has held its ground, in spite of a surprising excess in the use of it fifty years ago which might well have produced a reaction. This is partly due to the extent to which Latin versification is still practised, repetition being regarded as a necessary auxiliary to that art; and also to the fact that wherever boys have grown up with minds well charged with passages of Latin poetry it becomes easy for them to make something of a show in after life of their classical training. However hollow the accomplishment may in reality be, the knack of felicitous quotation never fails to secure applause; and as long as quotations are made, so long there will

be persons desirous of understanding and possibly of capping them. A further reason for the continuance of the practice is the belief that it strengthens the memory and tends to familiarise the growing mind with noble images and lofty thoughts.

On the other hand, there are serious and numerous difficulties to be encountered in the exacting of repetition in school life.

Peculiar practical difficulties of repetition in class teaching

First, it is a task of remarkably unequal severity for different boys. The inequality seems to be far more noticeable than in any other subject, though it may be that this opinion demands more investigation than it has yet received. But in practically every form there are a few boys to be found who unquestionably experience a grievous difficulty in learning short passages of Latin poetry by heart, though they have been carefully taught beforehand the meaning of every line. Secondly, the dealing with this difficulty—and, indeed, with all that has to do with repetition—is one of the most tedious and vexatious parts of a teacher's work. It is of course a mystery to him why ten lines of Virgil are a difficulty to anybody ; why the learner stops dead in the very middle of the best sentences, showing thereby a crass want of understanding of the whole. Lastly, there is a formidable amount of evidence which goes to show that, after all efforts are made, much of this beautiful poetry is forgotten. The aim of the teacher will therefore be to secure some permanence in the knowledge gained, to see that only the boys who can profit by it practise it, and to minimise the time spent on it.

To take the last point first. The plan adopted in the past, and sometimes still, was for boys to come into school and say their lesson and go ; or to combine the saying of the poetry with the doing of a piece of written work, all the boys remaining in the room throughout. But there is no need for this waste of time in locomotion. The whole class can sit still, and different boys be told to repeat two lines, till all are tested and the passage has been said through three or four times. Those who are not engaged in saying the lesson can get some profit from listening, or at least in looking up their construing lesson which immediately follows. The repetition takes for twenty-five boys about ten minutes.

Exemptions from repetition

The question as to who ought to say Latin is far less simple. According to our diagnosis, a considerable number ought to abandon versification by sixteen years or so. Ought they to continue Latin and Greek repetition? Certainly, if they can go on with the reading of the language.

Indeed, it is more necessary for those who do not do verses than for those who do, since it must tend to give precision to the memory and slightly add to the vocabulary. It acts, in short, in one or two respects as a substitute for verses. But among the great unlinguistic who give up verses a few will be found who cannot make head or tail of Latin repetition. These ought to be put on to English, the great object being to give the mind some slight deposit of noble thoughts wedded to noble verse. The vernacular will present quite sufficient difficulties to them. But for the others the necessity is equally great that they continue to learn Latin, yet not so as to abandon all English. And indeed, according to the age of the learner, so will his proportion vary. From twelve to fourteen it would be foolish to insist on Latin poetry. The memory can be exercised on English, on lists of words (which have been previously used), and on some sentences. But it is foolish to add Ovid to this because some few of the youngsters may possibly write fair Latin verses some day. As they get older, the amount of Latin and Greek should increase in proportion to English—that is to say, for those who show that they can enter into the spirit of the language a little, and are likely to make progress. For the others, from sixteen to eighteen, English should not be discontinued, but the Latin lessened.

Next, great attention should be paid to clear articulation. It is worth observing that an inflected language gives exercise to the pronunciation of the last syllable of a word: just where an uninflected language breaks down as an instrument for the purpose of articulation, especially if, as in English, the tendency is more and more to throw the accent back. It should be remembered also that bad articulation means that most of the meaning and associations of a word perish in the utterance. They are not perceived by the listeners; nor is it likely that they are felt by the speaker, though this is not always the case. Boys should stand up to say their portion, however small, and learn *erectos ad sidera tollere vultus.* This encourages the right use of the organs of speech, and adds to the difficulty of getting surreptitious help.

Recapitulation of extracts

With regard to the permanence of the knowledge gained, it is quite certain that a boy with a fair knack of learning by heart will forget very speedily unless some measures are taken to prevent the words escaping. If pains are taken to secure good articulation the memory is assisted; again, if the meaning is made vividly clear, the same result is produced; and it should be noticed that boys of all ages,

when reciting, no matter in what language, show a marked inclination to pause at the wrong place, thereby indicating how unable they are to give the sense of the passage its due prominence as compared with the sound. Therefore the passage should be set before them so as to induce them to link portions of it together by the meaning and the connexion of thought, and to rely as little as possible on the mere sound of the words. A teacher should, in short, ask himself how any boy is permanently benefited if he remembers a passage of Latin and Greek by the sound alone. But evidence is to hand that the ability to do this resides in some boys not otherwise gifted, and hence the bewildering inequalities between boys who are in other respects nearly equal, and the surprising cases of isolated proficiency in repetition in the fag end of the form. For these, as well as for the sieve-headed, clear perception of the meaning is important, and will help to a rational retention of the passage.

But there is also a device which should not be neglected. The passages, if taken from a continuous piece, such as a Greek play or a long extract from the Georgics, should be learnt not merely in succession, but on a system of constant recapitulation. Thus, ten lines one day, fifteen the next, consisting of the ten old ones and five new ones, and twenty the next, and so on till the first ten may be discontinued. This is quite workable, and is the exact system pursued by anyone who wishes to learn and retain a long portion of any written work. Failing this, a regular revise at the end of the term, or once in the middle and once at the end, is worth trying, but for many reasons the other is better.

Preparation and Construing

How to test preparation without spoiling the lesson

This subject brings us face to face with the most difficult of all the practical problems in organising classical training throughout a school. It is the problem how to insure thoroughness in testing work without destroying all incentive to love of knowledge for its own sake, or abjuring the adoption of some of the most successful methods for exciting and sustaining interest in the subject. It may be briefly said that in almost all treatises on methods of teaching the fact is ignored that the use of the preparation time must be tested. That is to say, the prevailing practice is for a class to be set a portion of a Latin or Greek author to prepare ; and after preparation the master hears the pupils construe, probably insisting also on the parsing of some

of the more difficult words. Obviously he is much fettered in his methods. A task requiring great patience and insight is set him, for he has to determine how far a particular boy's inability to handle the passage is due to his having made a languid attack on it during preparation, or to feebleness of brain. As soon as he takes this in hand he discovers that for the test to be at all searching, time is required. Several boys must be 'put on' to construe, or they may, as in the old days when classes were enormously large, calculate securely on a reposeful immunity from all harass, and forego all preliminary study of their author. And, let it be observed, all winsome theories as to guiding the activity of a boy's mind into new conceptions and wider views of truth conflict seriously with the definite necessity of seeing what labour the boys have given to the lesson. Every teacher knows how tempting it is in the middle of a Xenophon lesson, while wrestling with dimly known words and faintly guessed constructions, to glide off on a disquisition on some theme suggested by the narrative of the Ten Thousand, and by artful questions to educe some rich and refreshing interest from all his audience. It is, perhaps, excellent teaching, but it is no test whatever of preparation. This difficulty is a very real one, and is felt throughout all schools in different degrees, especially with boys between the philistine ages of fourteen to seventeen.

One way of meeting it is sometimes proposed. Why should not the teacher manage the preparation as well as the hearing of the lesson, and continue by judicious hints and suggestions to carry the boys over the ground till a sufficient portion has been traversed, and time has been gained for the employment of some of the finer arts of creating interest? One prosaic objection to this is that every master who is not so employed already (those who teach the youngest boys sometimes are) will suddenly find his work nearly doubled. Instead of preparing his lesson between 11 and 11.45 and then hearing it till 12.30, he will be obliged to prepare before 11 and be ready to exert himself to the utmost from 11 to 12.30. And of the same kind, but even more insurmountable, is the difficulty that in day-schools preparation has to take place in the homes, and cannot be professionally controlled. And even if sufficiently revolutionary reforms enabled us to ignore these facts, it is far from clear that the elder boys would not fail, under the new conditions, to acquire the power of doing anything by themselves. The more stimulating the teacher, the more he is missed; and the freshman at the university who has to work for hours alone

and unaided, finds himself, as things are, quite sufficiently at sea to make us pause before we increase his dependence on the sort of teaching which he is henceforth to do without. In short, it may be said at once that in a great many schools for boys over fifteen, such a proposal is out of the question; and even if it were possible to carry it out, there is reason to doubt whether it would be expedient in any school.

Our methods, therefore, must combine the two aims—they must test, and they must stimulate. We are now speaking of boys above the lower school stage, who have to be trusted to prepare their lessons by themselves. The first thing a master will do will be to test the preparation as briefly and thoroughly as possible, by setting two or three questions which can be answered in one word on paper, get the boys to exchange papers, correct ink-written answers by pencils, mark, add up, and return the papers to the master. But if a piece of a Latin or Greek author has been prepared, this manœuvre covers a very small portion of the ground. The question is, can the class construe their author? and even if the parsing is asked, together with some of the notes and the proper names, the death-struggle between the boys' brains and the sentences in the book cannot be evaded. They must construe, one after another, slowly, and with many stumblings. At once it becomes plain that the interest in the subject must evaporate, unless of course it happens to be a simple story of some blood-curdling episode in semi-barbarian times. The teacher, therefore, will try to counteract this dulling influence by giving the class the benefit of a continuous translation of the whole passage before the boys are dismissed. Indeed, it would be well, by way of varying the ordinary conditions, now and then to hasten over the necessary ground of preparation by putting on the better boys, or by helping the feebler ones over the text till the lesson is pretty well finished, and then spend the last twenty minutes or so in imparting information, stimulating thought, and making the language more clearly a vehicle for the expression of thought by showing how the turn of a sentence affects the sense of the whole narrative, how a certain mood makes the difference to the gist of a speaker's remark, &c. &c., and gradually welding the sense and the language together till it becomes possible to explain some of the scene by using the author's phrases without translating them any more.

The recommendations of the American Committee of Ten on this subject are very emphatic. They urge, not that Latin should be actually talked by the teacher, but that the handling of the

phrases by good reading and repetition be so vivid that the pupils shall at last be able to appreciate their meaning without thinking of their English equivalents at all. Without illustrating this point any further at present, it is clear that, between this sort of teaching and the testing of the boys' knowledge gained by preparation, a sharp distinction must be drawn; the question, in short, must first be asked whether the testing is to be devoid of all stimulus of thought and interest, a mere dull verification of what is in different boys' brains, and a registering of results.

Certainly not. The examining part of the lesson cannot be the most interesting, but it may be made the most valuable if skilfully conducted. It gives boundless opportunities for bracing the reasoning faculties, because boys while construing are incessantly employing English expressions which denote confusion of thought, slovenly investigation, shallow reasoning, and indeed every form and complexion of hasty and erroneous inference. The idioms of classical Latin and Greek writers lend themselves to this treatment most admirably; and the teacher's art is displayed in fine perfection by the methods that he adopts for convicting a boy of having misused his reasoning faculties. With one boy he will be slightly sarcastic; with another who is more sensitive he will be encouraging; with all, he will be ready to give praise whenever he sees that honest effort has been made. Not only ought the process of being judiciously set right and put back into the straight path to be a pleasant one to the pupil who has been straying, but it will be found to be interesting also to the rest who are listening. And through it all, the master will be carefully forming an opinion whether the difficulties which the boy stumbles over are those which he might have surmounted, or whether in the event of success the effort has been a genuine one deserving of an encomium.

Meantime, care must be taken to avoid countless pitfalls. Suppose, along with the necessity of testing, there is the further necessity for marking answers or for letting the boys take places. The master must ask plenty of questions, or must anyhow let the mass of the pupils suppose that they are being fairly dealt with. But the anxiety to attain this end frequently results in questions being asked which no one present can answer, and which waste many precious minutes in being passed all round. Very frequently a question which to the master is as plain as A B C, is to the boys a mere enigma owing to some unintentional obscurity in the wording. Indeed, nothing requires more watchful practice than this very framing of questions and passing them down. The

deal to be aimed at is of course so to ask that an answer may very soon be forthcoming, and to follow this first question with another which is quite as easy, but yet when answered lands the pupils a few inches further on.

Keeping, therefore, in view the necessity of testing preparations, we may sketch a lesson in Xenophon's Hellenica to boys of fifteen as something of this kind. Seven minutes are employed in getting a few grammar questions answered, or bits of knowledge which the boys were cautioned to have ready from the last lesson. Then twenty-five minutes given to construing, including really *distinct* reading aloud, and questions being asked to elucidate the text; finally, ten or twelve minutes for retranslation, or illustrating some syntactical points, or for questioning on the phrases with the books shut. This may give some idea of a normal lesson (without blackboard, &c.), the like of which is required by the exigencies of school life. But it is plain that with an author like Xenophon this sort of lesson ought to be varied with an occasional unprepared bit of reading and explanation of historical points. At intervals of a fortnight or three weeks, every boy should have his map before him and be ready to follow the narrative as recapitulated by the teacher, and illustrated as far as may be by references to present-day politics or well-known periods of European history, English Revolution, Napoleon's wars, &c. All this should be most carefully prepared by the teacher; with boys of this age such a lesson should take the form of a lecture proceeding by question and answer, and varied with a few minutes' stirring narrative; and as soon as ever the teacher detects flagging interest he must close his narrative and begin questioning again.

Sketch of a Xenophon lesson

But so far we have ignored blackboards and other visible objects. Professional opinion has now come to recognise such aids to teaching in many subjects, but in secondary schools, at any rate, there is a disposition to consider language teaching as something independent of chalk drawings on the blackboard. Is it not, however, obvious that if history, geography, mathematics, and science are to be equipped with all sorts of alluring paraphernalia of pictures and machinery, language teaching will be seriously handicapped in the matter of securing a willing interest from the pupils? It is all very well to say that the belief in the value of language teaching is so robust that it can stand the 'whips and scorns of time' without being shaken, and that lessons that are attractive are probably transient

Pictorial aids to construing lessons

in their effect. There is good reason to doubt both these assertions, but all that need here be emphasised is that the puzzling out of a classical author can be made at once a more permanently valuable exercise, as well as a pleasanter task, if a fair appeal is made to the eye as well as to the ear. There can be no marked distinction between two sorts of lessons in respect of the need of such an appeal. The crux is how to make it.

In the case, then, of classical authors we have to distinguish the pictorial aids to learning the subject matter and those to assist the purely linguistic teaching. The former hardly belong to the subject of this chapter, though beyond all question such aid will be largely employed by any successful classical teacher who wishes to make the narrative of a historian vivid, or to illustrate a passage like Virgil's account of Laocoon. The methods, however, to be observed are those of history teaching or of art lecturing. They require care and preparation, as all such devices do; and the teacher must first have got a clear idea how far the age of his form allows him to expatiate into these regions. The broad principle has to be observed that in classical lessons the younger the boys are the less time should be subtracted from the language teaching, since they have more than they can compass in this subject alone, and the geography and history and science lessons or lectures ought to supply the place of this external interest-evoking teaching; whereas later on, sixteen and a half to nineteen, the higher forms should be made to feel what we owe to these ancient authors in respect of thought and information as well as of style.

In language teaching pure and simple the blackboard has its part to play. Some distinct gain is insured by the constant writing up on the board of contrasted forms, and building up an explanation upon the picture, *e.g.* the use of aorist and present infinitive may be taught by writing both words up on the board, then adding a short, perhaps semi-comic, sentence to convey the meaning, and leaving both on the board for a day or two to entrap some roving eyes which are not in search of knowledge at the moment. Again, simple derivations may be so treated, and, more important still when an opportunity presents itself for the class to hammer out a syntax rule from the examples furnished to them, the process should be duly registered in all its phases on the blackboard. It is possible to make the rule of sequence of tenses tolerably interesting if every step is supplied by the class with the examples before them. And it is a gain if the registering of results on the board allows the class to see how near they are to the end

of any particular subject; a lesson on elementary conditional sentences in Latin or Greek, or both, can be made less hopeless to a beginner when he sees from the outset that at first, anyhow, he has only three separate forms to thoroughly master, and the gradual filling up of the examples gives the same sort of satisfaction that a child feels at seeing a picture completed under the artist's hand.

Leaving now the questions connected with the testing part of the lesson, we have to ask if there are any other devices for wholesomely stimulating effort, which may be employed after the testing is over. One such there is which is advocated by some authorities. It is to vary the construing with a rapid running through of a few pages, in the hope of revealing to the reluctant minds of the class the startling fact that the author had a message to give to the world, a continuous narrative perhaps of events which can be followed with profit.

Rapid construing with the object of stimulus

In considering the merits of this suggestion, the old distinction must be again noted; with boys of twelve to sixteen years the good that will be secured by this reading of a classic will be little or nothing; after sixteen many boys become gradually fit to profit by something of the kind, if the authors are carefully chosen for the purpose. Young boys, it must be admitted, do not care for the subject matter of what they read in Latin and Greek till it is very skilfully boiled down to suit their palates. This is true of all unadulterated authors except Homer; and with a form of boys in the lower middle school beginning Homer, there would be something to be said for a sparing application of this principle. But, after all, the end in view would be better attained by making them read the whole of Professor Church's admirable Stories from Homer. With elder boys, on the other hand, it is found both interesting and profitable for the teacher, after hearing fifty or sixty prepared lines construed, to go rapidly on for another sixty or a hundred; the pupils are old enough to understand the words and the grammar and not too old (who is?) to relish the story. But it is not clear that the same benefit results in the case of other authors. I should be inclined to mention Livy as one with whom this method succeeds, and Demosthenes to a lesser degree, and only with boys quite able to follow the Greek of a long sentence when rapidly translated. With Greek plays little can be done. It is true that the story of the Œdipus Rex is of vast interest, but if it be read *strictim* what a grievous loss of fine training comes from omitting the close study of the text! And no other play strikes a modern

reader in the same way. But at the same time it is idle to decry any such method as this on the ground that it encourages loose and inaccurate reading of the classics. The object aimed at by the two methods is quite distinct, and it is only where all the benefits belonging to close reading can be abundantly insured, that the expatiating over a larger tract of country ought to be occasionally tried. Even as to older boys, however, it may be said that the most convenient way is to encourage some reading with a first-rate translation in the holidays, when the marked change from the restricted portions painfully conned over during the term may well assist the mind to expand and to gain a new belief in the vitality of the old writers.

Verse Composition

It is a great mistake to regard versification in Latin and Greek merely as the cultivation of an elegant accomplishment. For the majority of boys who work at it will never pursue it beyond the gymnastic stage, though it will not be long before the imagination and observation will be directly cultivated along with habits of accuracy and precision of language.

The gymnastic element in versification

Experience has taught us that many pupils reach the end of their tether as soon as the exercise begins to be constructive. They must then be turned on to other work. If they continue literary subjects it is well for them to work at English, especially in connection with Latin and Greek translations. But it seems clear that only a very small minority should do both Greek and Latin verses. The whole of the gymnastic benefits can be secured by Latin alone; only those pupils, therefore, who desire to know Greek scientifically (*i.e.* not merely with a view of getting at the contents of the books) should begin Iambics, and even those not before they are sixteen or seventeen years old.

Stages to be observed

First stage, roughly, twelve to fourteen. The turning of very simple straightforward English into Elegiacs; first half lines, then whole; then complete with the use of vocabulary. The pupil should be encouraged to correct his own mistakes, and must always understand the English before it is turned. It is found that much interest may be excited by a plain narrative. In any case the English must not be tortured. Second stage, fourteen to fifteen and a half. Adjectives and adverbs to be supplied, and words not all given in the vocabulary. Every en-

couragement must be given to the right selection of adjectives &c. to suit the general sense of the passage, or of the scene described. After some attempt made at this stage, it will be found that some pupils must discontinue verses. Third stage, fifteen and a half to seventeen. Simpler expansion of English, and adaptation of phrases. Help should be given by a set of verse rules suggesting questions which the pupil can ask himself, so as to be led on to making suitable expansions (*e.g.* with ablative absolutes, participial constructions, nominative and genitive cases together, &c.) by the use of some such formula as *quis*, *quid*, *ubi*, *quibus auxiliis*, *cur*, *quomodo*, *quando?* As soon as some facility of expression is thus acquired, the last stage, that of translating, may be entered on, but even after that the number of verse students should be still further limited.

For boys working towards a scholarship standard, especially if much time cannot be given to English composition, original verse-exercises are very useful. The subjects given should be at first simple narrative, to allow of the pupil learning how to secure proportion between different parts of his composition. Then simple reflective pieces may be attempted, such as a speech put into the mouth of a historical character, or of some one in situations easy to pourtray; or a description of common natural scenes, &c. In this work every effort should be made to give the least sign of thought, taste, vigour, or imagination its due meed of praise. Some pupils acquire mastery over some of the difficulties of narrative without ever gaining much command of the language.

Benefits of versification

It will not be amiss if some reasons are given to support the continuance of this somewhat arduous department of classical training. Versification has been, and still is, much decried, and it cannot be doubted that the historical causes which account for its being practised in England, interesting though they would be to investigate, have ceased to operate now. The reasons which induced Sturm to insist on Latin verses beginning in the fifth form of his school at Strasburg, would, if clearly stated, be thought obsolete by the most ardent advocate of the study at the present day; and though many a headmaster now living could satisfy the requirements of St. Bees statutes (1583) by showing himself 'a meet and learned person that can make Greek and Latin verses,' there are other headmasters and a vast number of outside critics who would pronounce versification to be about as valuable as the Sunday work at Strasburg would be for English boys, namely, the rendering of the

German catechism into Latin. But it is of great importance in such questions to distinguish the present use of a subject of education from its supposed use in the distant past. If the latter is thought to be an hallucination, we ought still to consider, with perfectly unbiassed minds, the exact educational effect of a study which has by strange chances survived to the present day. In the next place it is obvious that a great deal of the existing feeling against verses is due to the embittering effect of the memory of prolonged abortive efforts in past years, that is to say, the abortive efforts of those boys who continued verse-writing long after the time had come for a passing to some more congenial task. It is probable that there is a similar time in many studies, but in this it makes itself known with singular distinctness; and if the symptoms are disregarded, the failure that results is not only more patent but more painful than in any other literary work. Therefore all care should be taken to admit all learners of Latin to the first stage of this subject and nearly all to the second, but after some carefully watched experiments of attempts to supply words or to recast phrases, further selection should be made, and the sifting continued to the end.

The peculiar benefits to be derived from the first stage are: 1. Accuracy in use of inflexions, genders, &c., it being a special feature of this exercise that a false gender, for instance, will often spoil the line. 2. Sense of rhythm, without which many of the reasons for reading Horace or Virgil at a later age disappear. 3. Precision of vocabulary. It will be seen on reflection that these benefits are not to be secured by elementary prose-writing, or by reading, except in the case of very highly gifted boys.

In the next stage, that of supplying adjectives and expanding facts with pictorial additions, the faculties of observation and imagination are directly stimulated. It is impossible for a learner not to be brought face to face with problems of thinking out for himself appropriate bits of description; such problems as very gradually increase in complexity, but in their simplest form demand the exercise of reflection more cogently than prose writing, theme writing or paraphrasing English, while in the learning of modern languages there does not appear to be any similar call upon the imagination. Other peculiar effects of the later stages of versification would be the necessity for close study of first-rate poetry, the challenge made to the mind first to seize firmly the exact meaning of a fine-sounding phrase, then by analysis to break it up and recast it till it becomes suitable for expression in a totally new shape.

In short, it would be advisable for all destructive criticism of this time-honoured practice to be checked by the thought of what Latin teaching must inevitably become without it. The most effective of all the devices connected with classics viewed as a gymnastic of the mind would be discontinued, and the aim of teachers would necessarily be more concentrated than before on the possibility of using the language as a means of cultivating the literary taste. There is no reason, however, to suppose that success in this endeavour would be any commoner if verses were abolished than it is now. It is difficult to conceive of any mere change in methods firing any very large number of English boys with genuine literary enthusiasm through the medium of Latin, especially when it is clearly seen how rare such enthusiasm is among adults, and in the vast majority of English homes. So that to take away from classical training a singularly potent instrument for stimulating early habits of thought, is to diminish the value of that training as a mental gymnastic; and if its value in this respect is diminished, with no reasonable prospect of compensation in other directions, it is probable that the scepticism which now exists as to its claims will be materially increased.

EDWARD LYTTELTON.

THE TEACHING OF SCIENCE

THE turn for science may be either congenital, or acquired very early in life. Many an eminent man of science was remarkable as a little boy for his attention to mechanisms or natural problems. Newton busied himself about windmills, water-clocks, and sundials. Descartes, while still a child, was called 'the little philosopher.' Such inquisitive children are often averse to book-learning, and make a poor figure in the studies of the old-fashioned grammar-school. It is well, therefore, to give opportunities for the early discovery of the scientific bent. We need not be afraid of over-stimulating the child's mind, if our methods are gentle. Lessons in science can hardly begin too soon if they are living and human; if they are harsh, bookish, and unrelated to the needs of the pupil, they will be hateful at any age.

Early lessons in science

The child of eight or ten is commonly observant and curious. He is prone to spend much of his abundant leisure in finding things out, perhaps in finding out things that we would rather he did not know. He has often a lively imagination, and makes himself the hero of every adventure. One day he is a wild Indian of unspeakable ferocity; the next, an eloquent clergyman, moving his congregation to tears. Then he is imitative, eager to do what you do, and to say what you say. He is restless, and cannot easily keep his mind fixed on his work, unless his hands are busy too. He has no turn for abstractions, does not see the good of precise definition, does not value fine distinctions, nor remember them. He has a very scanty vocabulary, and has by no means mastered even his native language.

The child whom we have to teach

We hope to see this curious, imaginative, imitative, restless child grow into a man, who, without losing his childish activity and eagerness, shall have gained the power of sustained and systematic thought. The qualities of the child are our opportunity;

we must use them so as gently to draw on the riper stage. Even his failings and weaknesses must be studied. His curiosity makes him, if due encouragement is given, more and more a reasoning creature, fond of finding out the *how* and the *why*. He will bring you objects and questions, as many as you please, if you welcome them instead of treating them as an odious interruption. Things are on the right footing when the children question incessantly, when their heads cluster round you as close as possible, so that they may see all that you are doing. We want to make them curious, and to keep them curious. The imagination of the child can be gradually drawn off from himself. He can be encouraged to picture with more and more detail and accuracy objects not before his eyes, and at length things which no eye has ever seen. His imitative faculty is a chief instrument of his progress. By this he learns to handle tools and to improve his powers of speech. He will even, by his faculty of imitation, learn to inquire, if he sees inquiry constantly going on about him. Since the child is restless, and soon tires, we must be careful not to keep his mind on the stretch for a long time together. Half an hour of science is a good deal for a child, unless the matter in hand is particularly stirring and practical. Talks over the breakfast table, experiments suddenly devised in answer to a question, and, above all, the country walk, are the things which open the minds of the children most thoroughly. The child learns best by doing. As soon as we begin to talk to him out of books his attention droops. All these points must be attended to if our science is to help, and not to hinder. Let us not strive against nature, trying to thwart and subdue the instincts of the child, but, by observing and using them, contribute to his harmonious development. Let us not fancy that we can make or mould; we can only watch, and nourish, and exercise.

How to develop the gifts of the child

It is not every one who is fit to put the child in the way of inquiry. Great attainments in science are not at all necessary, but the habit of inquiry is. If you are not yourself an inquirer, you cannot teach the children to inquire. Teach them something else, that you do understand and care for. Science-lessons without inquiry, without wonder and unfeigned longing to know something more, are dead and stupefying. Do you work at science in the holidays? Do you think about it when you might if you pleased be doing anything else? Do you make experiments on your own account, merely to gratify your own curiosity? If not, you will never make a really

Inquiry necessary to the teacher

good teacher of science; the root of the matter is not in you. If you do, you may be hopeful, however humble the results. Once when a talk arose as to whether the sun can put out the fire, one person in the company devised and carried out an experiment for testing whether the effect was real or imaginary. That was proof of the scientific turn of mind.

The teacher may well rejoice when he sees the children try things on their own account, and he will, if wise, be slow to interfere at all, either by advice, or criticism, or admiration. I am fond of quoting in this connexion a passage from Edgeworth's 'Practical Education.' A boy of nine finds a kind of rainbow on the floor. He calls his sister to see, and wonders how it came there. The sun shines bright through the window. The boy moves, one by one, several things upon which the light falls, saying: 'This is not it. Nor this.' At last when he moves a tumbler of water, the rainbow vanishes. There are some violets in the tumbler, which he thinks may explain the colours on the floor. But when the violets are removed, the colours remain. Then he thinks that it may be the water. He empties the glass. The colours are still there, but they are fainter. This leads him to suppose that the glass and the water together make the rainbow. 'But,' he goes on, 'there is no glass in the sky, yet there is a rainbow, so that I think the water alone would do, if we could but hold it together without the glass.' He then pours the water slowly out of the tumbler into a basin, which he places in the sunlight; and he sees the colours twinkle on the floor as the water falls. I envy the teacher who can inspire such an inquiry as that.

The habit of inquiry in the child

The lessons to children may begin almost anywhere, and we need not be at all solicitous to make them continuous. A country ramble leads us to notice the trees by the roadside. How do we tell a sycamore, an oak, or a larch? Then we fall into talk about the various shapes and kinds of leaves, and ply our questions. Why is the leaf of the sycamore cut into lobes? Why is the leaf of the crowberry rolled inwards? Why does the larch cast its leaves every year, while the Scotch fir does not? Why are all our common evergreen leaves of simple shape?

Home lessons

The oozing of ice from the crevices of a gravel-walk during frost suggests a little experiment. We take a bottle, fill it quite full of water, cork and wire it, and set it out of doors (not too near a window) during hard frost.

The course of a brook is a capital study, especially in a hilly district. A lively stream, which tumbles down a slope formed of

different rocks, some hard and some soft, is best of all. Notice how a bed of hard rock, underlaid by softer rock, will often form a waterfall. Notice the cutting back of the waterfall. See where rapids, and deep pools, and eddies form. Observe the gash made by a stream upon a hill-side. Some streams, discharging into a wide valley, form a fan-shaped sheet of gravel; others do not. Try to work out one or two cases in detail. Notice the pebbles, gravel, sand and mud in the bed of the stream, and the sorting of the materials in a shoal. Look out for tufa, deposited from a petrifying spring, if there is limestone about. See which is the deep and which the shallow side of the stream, and try to discover the principle involved. What circumstances favour a straight course, and what a crooked course? How are bends formed? Do they ever straighten themselves, and how? Look at the little rivulets which form on the road after rain. Examine the tiny river-systems, the cutting away of banks, the accumulation of shoals, the sorting of loose material, and other features of the miniature river-system.

Pound a piece of soft, coarse sandstone in a mortar. Separate the components into sand and clay by washing. Look out for mica-flakes. Are the grains of flinty sand sharp or rounded? A simple chemical test, previously tried upon acidulated water in which a rusty nail has been washed, will show (in most cases) that the sandstone is rich in iron. An old horseshoe dug out from a sandy seashore will often illustrate the cementing action of iron rust.

The heavenly bodies make a delightful or a tiresome study according to the method pursued. Avoid at first all theory, and give the children plenty to do. A few zodiacal constellations marked on a sheet of paper will serve as a chart upon which the course of the moon for a few days can be laid down. When one of the brighter planets is visible, let its course be noted in the same way. I find that many people who are not unobservant of other things cannot tell offhand how the moon and planets appear to move in the sky; how the apparent motion of the moon differs from that of a planet, and why; nor how the apparent motion of an inferior planet differs from that of a superior one. All this may be pleasantly learnt by direct observation. A little play-work will be attractive. Suppose that the children prick certain constellations on card, and put a candle behind the card. Round holes of larger size may represent the moon and the planets, and by a little contrivance the planets can be made

to move among the stars with a very tolerable imitation of nature.

It is good to keep a rain-gauge and a barometer, and to follow the forecasts in the newspaper, trying all the time to form some rational idea of what the weather is about. The children will listen eagerly to discussions as to the weather expected, and will feel that the interest is heightened when you predict a little more confidently than usual changes which do not come. Let them learn to read the instruments and mark the charts, but do not force them to go on marking when the interest is gone. Routine is nearly always irksome to children, and routine without a purpose benumbs the faculties. Observations made to settle scientific questions should be treated with a respect which we need not pay to aimless records, made year after year merely because they are easy to make.

Collections

The country-walk should stir up curiosity, and curiosity will cry out for a place in which to store its treasures. The bird's nest, the moth's cocoon, the bits of spar or lead ore from a mine must all be kept safe. Do not buy cabinets and drawers to hold these things, but let the children make all that they require. The planning and the cutting and the fitting are an education in themselves. Even mounting and labelling have their educational value. Do not urge the children to long spells of mere routine. Pressing and naming plants is very well upon occasion, but it should not take the place of more stirring occupations. It is finding the answers to questions which chiefly deserves to be called science.

The interest of natural objects

It is probably owing to some bias in myself that the young people about me have profited more by studying natural objects than any others. If they had seen me always busy with tools and machines, no doubt they would have taken heartily to tools and machines too. All are good; anything that makes the child think is good, especially anything that makes him try an experiment, no matter how simple. Natural objects offer very special advantages in their accessibility, in the perfection of their infinitely varied contrivances, and in the peculiar interest which both child and man take in anything that has life. Other sciences may claim precedence in the later years of school life, but there is, I believe, nothing better than natural history for developing the faculty of observation, and opening the way to studies of greater generality and more immediate utility.

When regular lessons in science begin, there need be no sudden change of method. Let the lesson still be unsystematic, brief, and calculated rather to stir the curiosity than to give information. For two or three years at least they may suitably take the form of object lessons.

Object lessons

The method of the object lesson has often been described, but the ordinary practice falls far short of the original intention. Prevalent faults are these :

1. The so-called object lesson does not answer to its name ; there is no object. Pictures or lantern-slides take the place of objects which can be seen and handled. A stuffed animal or a dried plant is as poor as a mere picture. The object should be interesting, familiar (as a rule), and so easily procured that every one in the class can have one to himself, or can at least examine it as often and as long as he pleases. It is very seldom satisfactory that the teacher should hold up one object before a large class.

2. The lesson turns upon words and phrases, grammar, spelling, etymology and so forth, instead of upon the properties and circumstances of the object.

3. There is nothing for the class to do except to hear and repeat the teacher's explanations. If the lesson were all that it ought to be, they would be finding out answers to useful and interesting questions, or putting questions of their own. The good lesson can be told by the work which springs spontaneously from it. Nothing puts the teacher into such heart as to find that his lessons have stirred up the class to do or try something out of school.

It is a mistake to produce a book in class, and the lesson will not go with spirit unless the teacher has done work upon the object himself. I am often told that the teacher has not time to work up lessons for himself. That means that he has not time to teach well ; I fear that it is often a just complaint. One partial remedy is for him to get up now and then, if only once a year, a new and original lesson, founded upon his own observation and thought. Another partial remedy is to set up teachers' classes, in which object lessons of the right sort can be prepared by a number of teachers together. After some years' experience of such classes, I find it best not to produce an object lesson ready made. The teachers cannot be treated as children. It is often well, especially in the practical work, to encourage them to go far beyond what could be attempted in school. The real aim of the preparation class is to make the

teachers observant and thoughtful, not to put words in their mouths, and models in their hands.

Even in this early stage we should seize every opportunity of applying what has been learnt to real business. Canon Moseley, in his account of the King's Somborne School,[1] shows how to apply the law of increase of surfaces and the rule of three to dressmaking. 'Among the most interesting features of the girls' school is the needlework. The elder girls are taught not only to work, but, by paper patterns, to cut out for themselves; and the dresses of the first class, on the day of my examination, were many of them thus cut out, and all made by themselves. There seems to be no reason why the economical cutting out of work should not thus enter, as a part, into the ordinary instruction in needlework in our schools. The cost of paper for patterns would be little. The fitting of different articles of clothing to the children of the school would supply an inexhaustible variety of subjects for patterns; and for such an object the school might well afford a good many failures. The exercises of the girls in arithmetic might even be associated with this useful object. It is, for instance, a good question in the rule of three, knowing what the length of the sleeve of a dress for a person of a given height is, to determine what that for a similar dress for a person of another height should be; or, knowing how many yards of cloth would be required to make the dress in the first case, to determine how many would make it in the other. There can be no reason why the girls should not know that this last proportion is [for similar figures] as the square of the height in the one case to the square of the height in the other; that, for instance, the cloth in a dress for a person four feet high is to that in a similar dress for a person five feet, as sixteen to twenty-five. When a girl has cut out for herself the dress she has made, she has associated her labour, in a natural relation, with the exercise of her judgment, she has taken one step towards her emancipation from a state of pupilage, and gratified an instinct which associates the growing independence of her actions with her progress towards womanhood.'

Knowledge to be applied

As the boys grow older and capable of more serious effort, the object lesson begins to appear childish, and it is time to consider what shall replace it. We shall do well to make no sudden change in our methods, but gently to lead up to a stage still in the future,

1 *Minutes of Committee of Council on Education*, 1847–8, vol. i. p. 7.

the stage of continuous and systematic thought. For the moment it is enough to introduce exact methods into our work.

School arithmetic and geometry

The science master requires some special preparation in the boys who take up quantitative experimental science, but his expectations are often disappointed. It is not unreasonable that he should demand of the boy of fourteen or fifteen that he should be able to work easy sums correctly, be ready with decimal arithmetic where not more than three or four significant figures are involved, as well as with the elements of arithmetical proportion, and with the simpler kinds of approximation. It would be a great help if in addition the schoolboy understood the metrical system, knew something about the mensuration of plane and solid figures, and was practised in measuring with common scales, and in weighing with common balances.

It is unfortunately rare to find boys of fourteen, or even junior college students, who can do so much as this. The science master has often to explain how the decimal point is to be placed. Very few schoolboys of any age have been taught to use approximations, and the practice (still almost universal) of multiplying first by the figure of lowest place-value is a serious obstacle to their effective introduction.

The geometry which the English schoolboy brings to the science class-room is pretty sure to be Euclid. I will not discuss here the deficiencies which have caused Euclid to be rejected as a class-book in all continental schools. The English-speaking nations have long had it all to themselves, and pay for their conservatism by their inability to apply geometry to a great variety of important and interesting problems.

Whether Euclid is retained or not, the first course of geometry should be graded, practical, and exploratory or inductive. Paper-folding, dissected figures, geometrical drawing, practical geometrical problems, and all that comes under the name of experimental geometry, belong to this stage. Afterwards we shall want deductive geometry with strict and general proofs, but the beginner wants nothing more than geometrical notions and simple geometrical exercises.

Elementary mechanics (experimental)

Let us suppose (though there are plenty of alternative courses) that while the boys are studying geometry and mensuration they are taught some elementary mechanics. What considerations ought to regulate our treatment of the subject?

Here, as everywhere, let us first consider the boy whom we

have to teach. What does he already know about mechanics? Where are the points of interest for him? What can he be got to do with the mechanics which we propose to teach him? for he will learn chiefly by doing. Lastly, what does mechanics lead up to? How can we employ it to draw on studies which are still in the background, and faculties as yet undeveloped?

To the first question we may be inclined to return a hasty answer. The boy knows no mechanics at all, his mind is a blank, a *tabula rasa*, a block of unstamped wax, an unhewn stone. I distrust all metaphors of that sort. They are not appropriate to the mind of the boy, which is not a manufactured article, potential or actual, but a living, growing thing; and they are seldom true to the facts of the case. When the boy first enters school he has already had many experiences, and it may turn out that he knows more mechanics than we imagine. He has not used eyes, hands, and feet for several years without learning something. He knows how to judge distance by parallax; how to judge the true shape of a great variety of solid figures from images distorted by perspective; how to judge the weight of a piece of wood or stone; how to lay hold of a heavy object to the best advantage; at what angle a stone should be delivered so as to travel as far as possible before it reaches the ground; how to poise his body upon two feet or one. This is all done by instinct, some will say—I think not; we see children practising these things, failing invariably at first, and only mastering them after repeated trials.

The methods of what we may call the school of Nature are largely applicable to early lessons in science, and when we are to teach mechanics to the boy, it will be of real advantage to make use of his scraps of knowledge instead of trying to wipe the slate clean and make a fresh start. For every bit of real knowledge is like a crystal dropped in a saturated solution: the solidifying particles cling to it by preference. The child believes in the old knowledge more thoroughly than in the new, and can do more with it. There are, however, considerable and inevitable differences between the school of Nature and the school of the schoolmaster. We now begin to use words. The knowledge becomes conscious. The pupil learns to explain to others things which he might perhaps be able to do, but which he could not, in the earlier stage, explain even to himself. The object lessons should have materially lightened the difficulty of the transition, but there is still much to be done.

To give effect to these principles, we should at first avoid all abstractions, laws of motion and the like, and study instead

of them the opening and shutting of doors, the poking of fires, the use of the tongs, scissors, pincers, and hammer. One implement of great educational value is a flat wooden bar poised about its centre, and furnished with pins or holes at measured distances, to which weights can be attached. The children should be led to discover that equal weights at equal distances balance one another; that a great weight at a short distance may be counterpoised by a small weight at a great distance. Then we shall be able to attack simple numerical problems, *e.g.* how to balance a weight of 50 grammes at a distance of 30 centimetres by a weight of 20 grammes, and so on. Before long we shall discover for ourselves the principle of leverage, to which all problems concerning levers can be referred. Common tools furnish many problems, *e.g.* why do scissors cut best when opened wide, and when the thing to be cut is placed as near the pivot as possible? Why do pincers grasp harder than tongs? If pincers grasp harder than tongs, why use tongs at all? Why do we slide the hand down the tongs when we have to lift a very heavy coal? What is the special use of the wheelbarrow? Why is the garden wheelbarrow of different shape from the navvy's wheelbarrow? These and a score of other questions can be methodised into a first course of mechanics, followed up by numerical problems, and made to yield definitions and general propositions.[1]

Here it may be well to warn the teacher that though the choice and order of the subjects seem to be haphazard, they must not be really so. The subject must be carefully thought out, so that the easy shall lead on to the hard, and partial conclusions to general ones. Moreover, the teacher, whether of mechanics or of any other branch of science, must have a real grip of his subject. It will not do for him to be on the level of his class. He must know exactly where he and they are going, and what are the pitfalls in the path. He must have that connected view of all the phenomena which is only got by general reasoning on deductive methods.

A specious objection may be raised at this point. If the teacher cannot get a thorough grasp of mechanics without deductive, *i.e.* mathematical, methods, *à fortiori*, the class cannot get it either. What is the use of a partial and imperfect knowledge? Why not postpone the mechanics until the class knows enough mathematics to deduce all the results from a few general principles?

[1] Useful suggestions for practical exercises can be derived from *Mechanics in Daily Life*, by V. P. Sells, though the method pursued is not that recommended here.

We must allow that all the theoretical results which we attain by experiments with actual tools and measures can be more neatly and more cogently deduced by abstract reasoning from general principles. That advantage we do not intend to forego. But we approach the subject first by the comparative clumsy experimental method, in order that the boy may acquire the quasi-instinctive mechanical bias which comes of grappling with concrete problems. We want him to know the feel of levers. We want him to get the habit of trying things while he is young enough to be plastic. We want to make him handy and expert in manipulation. If we put off these practical exercises till he has mastered elementary geometry and trigonometry, his mind may have set. Engineers believe that a boy who has worked at nothing but books and theories till he is sixteen or seventeen will never make a workman, and I believe that the opinion is well-founded. Give him an early practical and experimental training, and then his memory will be indelibly impressed by concrete images. He will have felt for himself the difficulties which theory solves.

It is to be reckoned as a fault (from the teacher's point of view) in the purely deductive mechanics that it is so complete. There is nothing for the beginner to do for himself. I once travelled over part of Switzerland with experienced and obliging friends, who knew what was to be seen, knew all the routes, looked out trains, engaged rooms and carriages, and left me free to enjoy myself. The result is that I now know nothing of the geography of the places which I then saw for the first and only time. The unfamiliar names were soon forgotten; the routes, which I had neither selected nor compared, I never really knew. I was *taken* everywhere, and, with rare exceptions, I quickly lost all that I had seemed to gain. Now and then, when inquiries respecting geology or natural history were on foot, I came for the moment to the front and had my own way. All these episodes I remember perfectly after many years; they stand out as illuminated patches, separated by vague spaces of unremembered incidents. It will be so with the schoolboy. Give him choice and responsibility, and he will remember; guide him over a path from which every difficulty has been removed, and he will not remember. But when once the features of the country have been impressed upon the memory by the effort and attention which the self-guided traveller is bound to exert, he can learn from books and talk. There is now no fear that the map or the photograph will obliterate the recollection of the actual scene. Nor need we fear that the schoolboy who has

first explored mechanics experimentally will jumble up his formulæ and confound weight with moment, or velocity with acceleration.

The eminent mathematician, Isaac Todhunter,[1] thought ill of experimental or natural science as discipline for young persons. He doubted whether the experiments were real experiments; he doubted whether natural history had any power to make people observant. Todhunter's proofs are not, however, convincing. He cites a lecturer who proved by experiment that a ball would fall down a cycloidal tube faster than down any other, but surreptitiously greased the ball which travelled on the cycloid. He has a story of another lecturer who proved experimentally that a pulley under given conditions would keep its place in the system, but took care to secure his pulley by a nail. He quotes the astronomical lecturer whose revolving pendulum would persist in revolving the wrong way. All this is idle. Every experimental teacher is not either clumsy or dishonest, and we must judge of the possibilities of a method by the experience of those who have taught it faithfully and well. Let me cite one instance, from Edgeworth's 'Practical Education,' of what has been actually done by means of experimental teaching. A boy of thirteen who had been taught in this way was called upon to invent a machine which should show the difference between uniform and uniformly accelerated velocity, and further, that if two bodies move through the same space in the same time, one with uniform and the other with accelerated velocity, the uniform velocity must be half the sum of the initial and final velocities. The machine which he devised is figured in the original narrative, and we are told that the construction of this machine led the boy to contrive a method of cutting spiral grooves upon cylinders and cones. One such case—and many could be cited if necessary—overweighs an indefinite number of fudged experiments.

The teacher who undertakes a course of experimental mechanics can get plenty of help from books, but he will probably arrange his own course in the end, and it is better that he should do this than work by any text-book.

Drawing

From a very early stage every learner of science should practise drawing. Drawing as a branch of fine art requires special gifts which are far from universally possessed, but there is a matter-of-fact drawing which ought to be known and practised by everybody, whether he is blessed with artistic sympathies or not. Everyone can learn to put on paper the true

[1] *Conflict of Studies.*

shape of a simple object, to plot curves, to lay colour in flat washes. There is nothing better to begin with than map-drawing. The child of eight may be allowed to use tracing-paper, but we shall soon advance to ruled squares, and learn what drawing to scale means. Experimental geometry gives plenty of useful experience; among other things it teaches the use of mathematical instruments. The natural history lesson is equally valuable in its way. Let the children practise all sorts of ways of recording the true shape of a leaf—sprinkling, contact-printing, tracing, drawing by squares, tracing the reflection seen in a vertical sheet of clear plate-glass, and so on. Incessant and varied practice will give neatness, handiness, and command of tools; it will be most serviceable to those who go on to design or other artistic work, to the naturalist or geologist, and even to the chemist, physicist, and statistician, to everyone, in short, who has to deal with facts and the relations of facts. The discipline to be got out of varied methods of representing pictorially facts of every kind is so alluring to the enlightened teacher as even to cast into the shade the practical value of the skill acquired. How hot and impatient he grows to see this magnificent opportunity neglected, and the boys set down to the servile imitation of lithographed copies!

Experimental physics

I suppose that everyone will, if possible, give experimental physics a good place in the school course. It is so informing and so stimulating, gives such abundant opening for observation, reflection, and construction, that it cannot be passed over without serious loss. It is a specially valuable feature of physical study that the same facts can be investigated both inductively and deductively; the physicist can learn unexpected things by experiment, but he can also reason from first principles to far better purpose than the chemist or physiologist. The results gained are immediately applicable to everyday problems. Notwithstanding these advantages, physics is much less extensively taught than chemistry. Its money-value is imagined to be less, the apparatus, if bought ready-made, is costly, and the mathematics essential to a thorough mastery of the principles is not always accessible.

I have seen, as everyone who pays attention to science teaching can see, striking examples of what can be done by a teacher of physics who is at once a mathematician and a workman. Costly apparatus can be replaced by very homely contrivances, and the practical skill gained by making instead of buying is invaluable. Nothing can be better for the schoolboy than to watch and help an

inventive teacher whose resources are rather scanty. Unfortunately, where money is scarce, time is often scarce too, and then the teaching becomes a wretched makeshift. To have to make your shilling go as far as another man's half-crown may be wholesome, but to be compelled for lack of time to fly from one ill-set-up lesson to another, to be reduced to 'showing the principle on the blackboard,' and to spend on marking exercises the time which is indispensably required for practical work, is ruinous economy. Nothing, however, is more common in the poorer secondary schools. The science master is often called upon to give five lessons a day, and his very evenings are filled up by routine work. It is useless to discuss methods with a teacher who is not allowed time to think.

Visits to schools where science is taught have impressed me with the urgent need of greater orderliness. It is not uncommon to find laboratories and class rooms where nothing is put away till the end of the week or the end of the term, and where you can handle nothing without soiling the fingers. Such untidiness is a wretched preparation for scientific work. It often proceeds from overloading the science master with lessons and exercise-marking. He has not time to put things away every day, and he has either no helper or no efficient one.

Boys who make a great part of the physical apparatus which they use gain a kind of handiness which is not easily got in other ways. Carpentry, it is true, gives useful experience of the properties of wood and of the use of tools. The physical course furnishes, in addition, practice in soldering wires, blowing glass, silvering mirrors, etching scales, suspending objects by silk fibres, and a score of other useful arts. The making of apparatus gives too the workmanlike notion of apparatus which has been made for you. It is too common for the laboratory student to use a piece of apparatus as a mysterious instrument which gives the required result, he knows not how.

Physics is easily and almost inevitably divisible into distinct parts, which can be studied independently, and whose connexion can only be perceived by those who enjoy a knowledge and power of thought beyond those of any schoolboy. It is not too difficult to study the elements of almost any branch experimentally. Hydrostatics, surface-tension, sound, heat, light, magnetism and electrostatics may thus follow, one after another, the elementary mechanics which we have supposed to be taken first. In each branch the early experimental lessons are both more practicable

and more stimulating than the later ones. After some progress has been made, the experiments either become too difficult, or merely illustrative, instead of being fertile of new truth.

Chemistry

Chemistry has long held a foremost place in the school-course of science—a place which is justified by its practical importance and its power of interesting an active-minded boy. Until lately little effort has been made to train the schoolboy in scientific method by means of chemistry. The science master has been too often content when his pupils have got up a quantity of useful information, mastered a system of analysis by tables, and won a due proportion of scholarships. But it is now possible to study a working model of real, scientific, experimental, chemical teaching. Such a course has been arranged by Dr. H. E. Armstrong: classes are working through it, teachers are being trained to spread it yet more widely, and text-books have been written in accordance with it.[1] The old conception of teaching by means of a lecture illustrated by experiments has been dropped altogether, and the boys now learn by putting questions and finding out the answers. Let us take for example the lessons on chalk and lime. The class is made to observe for themselves some of the chief properties of lime; they make lime from chalk, determine the quantity of gas liberated in the operation, and discover its characteristic properties; prepare the same gas from chalk and acid, and prove its identity; combine the chalk-gas with lime, and prove that chalk is thereby formed. This is real science and true teaching. The class is not passive, as under the lecture system, but absorbed in the work; they are finding things out for themselves instead of merely being told. When I have attended such lessons, I have particularly noted the contrast between the apathy of the lecture-room and the stir and life of the class which is learning by doing. The work is exact and quantitative, and creates, what is far more important than any amount of information, the scientific character. It requires thought all along; the boys have to think out their questions, and get them into a form which admits of solution by experiment; they have to devise appropriate experiments and then to execute them; to reason from their own experiments and draw conclusions. Their curiosity is stimulated and also ennobled; they are inspired with the love of knowledge. Nothing is imposed upon them by authority; they get only the plain teaching of the facts. What they learn is imme-

[1] A good one is Perkin and Lean's *Introduction to the Study of Chemistry*. (Macmillan & Co.)

diately applicable; it comes up again in the later lessons, which are built upon the earlier ones; it comes up in a thousand emergencies of every-day life. The boy who has worked through such a course has got an ineffaceable experience of scientific method; he will weigh, measure, observe, and reason for the remainder of his life in a different way from untrained men.

I have only one criticism to offer. Dr. Armstrong's course of experimental science is at present rather heavily loaded with measurement, mensuration, and common school arithmetic. This is inevitable at the moment, for these things are of fundamental importance to exact science, and the ordinary teaching of the school does not insure that they shall have really been mastered. Some day they will be taught earlier and by other teachers, yet taught with due thoroughness, so that the science master will be set free to carry his own work further than is now possible.

I think it likely that physics and chemistry will more and more take the chief place in school science. If taught in the best way, they form an excellent preparation for other sciences, and their applicability to many practical arts is a legitimate reason for giving them the preference. Other considerations may, however, be allowed due weight. It may be found that the special gifts of the pupil or of the teacher, local opportunity, or the want of laboratories, favour the choice of some other science. Physiography, physiology, and natural history have in particular cases strong claims to attention.

Physiography

Physiography can be made to brighten the intelligence of the schoolboy, and to prepare the way for more special studies, if it is based upon direct observation and comparison. It may well begin with outdoor object lessons on natural phenomena, which gradually become continuous and interdependent. We must, as in any other science, make sure that the boys really do the work for themselves, and are not merely lectured to. No subject gives greater facilities for a string of information lessons, without value in the formation of character. Even the luminous and interesting manual of Huxley is open to objection on the ground that it tells too much and explains too much, besides dwelling upon things of which the schoolboy can have no immediate knowledge. But some of the later text-books of physiography are mere encyclopædias, devoid of educational value to the schoolboy. The real test of the teaching is to ask: 'What has our physiography led the children to do for themselves?' If there are no maps, or models, or collections

to point to as the outcome of the lessons, it is likely that the time has been wasted. An enterprising and inventive teacher can get splendid work out of the weather, the movements of the heavenly bodies, the form of the ground, the growth of deposits, the waste of sea-cliffs, the traces of ice-action, the history of a fossiliferous rock or of a bone-yielding cavern. He can press into the service any knowledge of physics or chemistry, any skill in drawing, photography or surveying, any enthusiasm for rambling or collecting, which his pupils possess. It is often a difficulty to any but a teacher of real originality that no text-book is suitable to every district. Perhaps the very best features which the neighbourhood affords are undescribed in text-books.

Physiology

Human physiology has the merit of possible usefulness in matters of health, and this leads to its frequent introduction into the school course. The difficulties of the subject are many. If we aim at real investigation, and not information only, we shall want dissection, microscopic study, and experiment upon ourselves; we shall require to apply to the very complex functions of the body the methods of the physicist and chemist. It is impossible to do much of all this under school conditions, and what is really possible is seldom attempted. Though I have often examined schools in physiology, I have not once found that the physiology taught had any scientific virtue. Parts of physiology might, I am persuaded, be taught to good effect. Respiration, for example, might be really investigated. It would be possible by observation, aided by simple physical experiments, to master the process by which the human lung is filled and emptied. The chemical changes which the air undergoes in the lungs might be actually investigated. Practical lessons on ventilation would naturally follow the physiological work, and these can be made both real and scientific, though it is not everyone who is equal to the task.[1]

Natural history

Natural history is often pursued in the school with good effect. A certain proportion of the boys or girls become enthusiastic over it, and continue their studies for many years. It is well to pick out from the natural-history object-lesson class those who show real interest in living things, and combine them into a school natural-history club. To find work for such a club seems to be a difficulty with teachers, and they

[1] *A Term's Lessons on Air*, by A. E. Hawkins (Rivington, Percival & Co.), will prove useful here.

often fall back upon expedients so poor as the preparation of lists of local species. I would have them aspire to the investigation of life histories. Let the boys rear insects, and make out all that they can about their habits, food, and transformations. Let them collect materials for the history of some common bird, lapwing, woodpecker, or cuckoo, establishing the chief facts by their own observations. When they come across an uncommon plant, it should be thought bad form to dry it for the collection without attention to the conditions under which it lived, and the possible reasons for its occurrence in that particular spot. Much of what is done in the name of natural history is utterly trivial and foolish, not deserving the name of science at all. It is only when the naturalist puts and answers questions that he assumes the attitude of the scientific inquirer.[1]

The school museum

A good school museum is a capital thing, but it is very rare. The actual museum usually oppresses the intelligence, for the numerous objects and the mechanical labour bestowed upon them have plainly mastered the thinking power of the arrangers. The dull man will infallibly make a dull museum; the interesting man will now and then, when circumstances are kind, make an interesting museum. The museum should call up the thought of pleasant and varied occupations, not of wearisome monotony. Things which have a history are likely to prove particularly stimulating. An ice-scratched boulder, a stone with runes graved upon it, a Roman altar, and the like can be made to tell their tale to good purpose if pains are bestowed upon them. Long series of shells, eggs, fossils, or moths should go into cabinets, where they will be sheltered from dust and sunshine, and cease to bewilder the young naturalist by their number and variety. I would have plenty of live things too, taking care to show only those which thrive in captivity. Aquatic animals and plants are usually particularly easy to manage, but care must be taken not to introduce the voracious species. A small room, if well lit, may do very well for a museum, and the fittings need not be costly. Let the boys make all that they possibly can for themselves.

The course of school science will have answered its purpose if

[1] The present rage for football, though it has its good side, is very injurious to the pursuit of natural history and other hobbies. Now the hobbies of the schoolboy are often the undeveloped researches of the man of science. I do not think that I should ever have become a naturalist if I had gone to a school where football was compulsory.

the boys and girls have got from it the habit of observation, the power of steady work, and the love of experiment. Their knowledge, when we have done our best, will perhaps be meagre and unconnected, but we need not complain if the practice of scientific inquiry has been set up.

Results

When early manhood is reached, we can attempt something more, and a change of method will be called for. There is no true and only way of teaching science, and if we suppose that there is such a thing, it is because we have fixed our attention too exclusively upon the knowledge to be got, and neglected the mind and character which have to be trained. 'Non l'objet, le savoir; mais le sujet, c'est l'homme.' So long as we had immature minds to deal with, our method was exploratory and inductive. Our chief aims were to rouse the curiosity, to set up the habit of inquiry, to apply everything as soon as it was learned. Henceforth, we shall aim at systematic and well-ordered knowledge; we shall be able to take full advantage of powerful and rapid deductive methods. To trace the consequences of positions which have been established is the chief occupation of the thinking man. The elementary training loses none of its value, but we need not protract it. The lecture and the text book, which a little while ago we treated as of doubtful utility, or even as positively mischievous, now find their true use. The trained student should be able to learn from anyone who knows, and by almost any method. He should be strong and persistent. The enduring love of knowledge should have replaced in him the short-lived curiosity of the child.

Later studies

It will in general be best that continuous, systematic work in science should be done, not in the school, but in the college or university. Here, therefore, it will be convenient to break off the present discussion. The chief lesson which I have tried to enforce is that we must study the development of our pupils not less carefully than our own explanations and experiments. It is almost as great a fault to try childish methods upon the man, as to try grown-up methods upon the child.

There is another question which I would gladly pass by, if I could. Any working teacher who reads what I have said will inquire: 'How will boys taught in this way pass their examinations?' For we have in this country come to estimate school-science almost exclusively by public examinations. Subjects which do not count for much in recognised examinations (*e.g.* geology) are little taught, and every course is

Science examinations

made to conform to some examination-syllabus or other. The examiners, to whom the direction of studies is thus entrusted, are as a rule more distinguished by their special attainments than by their familiarity with educational ideas. For their own comfort, and for the sake of even-handed justice, they like to proceed upon the most definite lines. To discover knowledge and ability is less their object than to mark consistently. Hence they incline to dwell on those parts of the subject which admit of exact statement, and to discourage those which, though less exact, are more permanently useful. Almost every examiner, consciously or unconsciously, favours grammar, and discourages literature; favours historical dates, and discourages biographical detail; favours numerical accuracy, and discourages experiment; favours learning by heart, and discourages independent thought. I have myself for many years sent up students to examinations which I thought more or less unwise. Both the students and I have suffered hardship in consequence; the men have not had a fair opportunity of showing what they could do, and they have often lost credit because they had not got up a particular set of technical terms. But on the whole I do not doubt that the best policy is to teach as well as we know how. Good teaching has its effect even upon an unenlightened examiner, who cannot help marking high the papers that show real grasp of the essentials of the subject. It is of less consequence that he does not discover all that we think good in our own candidates.

An exaggerated estimate of the value of examinations is a great obstacle to progress. We shall some day learn that examination, especially when carried on by written papers only, is a rude and imperfect test; it should be made accessory and not principal; it should never be allowed to dominate the course of study, even when the examiner is unusually strong both in knowledge and practical skill. Teaching with minute deference to another man's syllabus is at best a form of slavery. The more perfect the examination machine becomes, the less does it agree with that spirit of life and freedom which pervades all really good teaching.

Over-precision in marking

Much harm is done, I am persuaded, by over-precision in marking examination papers. The marking sheets affect accuracy in the unit's place, which even in an arithmetic paper is absurd. In a descriptive paper, accuracy within ten per cent. is as much as can be counted upon. After a good deal of experience in marking, and some experiments made expressly to test the correspondence to be expected by one and the

same examiner after an interval of time, I have come to the conclusion that it is best not to pretend to any numerical accuracy at all. It is juster to the candidates to arrange them in divisions, which in a large examination may be four in number, corresponding to the designations of (1) excellent, (2) fair, (3) weak, (4) hopeless. The first division may then, with some pains, be arranged in order of merit. To say that such a candidate obtained 70 per cent. of the marks (some examiners would perhaps say 73 per cent.) gives a misleading notion of the accuracy attainable. We can readily distinguish four or five degrees of merit in the candidates; few examiners can certainly recognise ten, and it is ludicrous to profess that we can distinguish a hundred.

Science and Art Department

It is very satisfactory to remark the reforms lately introduced by the Science and Art Department, which largely controls the science-teaching in our schools. 'Organised science-schools,' that is, schools which accept the general conditions laid down by the department, are now set free from any external syllabus. Their efficiency is judged, not as heretofore by mere examination, but by occasional inspection, and by a thorough yearly inspection, combining written, *viva voce*, and practical examinations. The teachers (and this is of the first importance) are encouraged to take part in these examinations.

Another encouraging symptom of the spread of sounder educational views is that in the new syllabus issued by the department for the elementary stage in chemistry, qualitative analysis, which used to count so high, has disappeared, and the practical work now set consists largely of simple quantitative experiments.

Numbers of classes

The numbers taught together in one class are sometimes excessive. A practical class in science under one teacher should not exceed twenty to twenty-five, and forty should, in my opinion, be the absolute limit of any class whatever taught by one person.

Table of school course

In order to summarise the course of school-science here described, I append the following table. The course is applicable to both elementary and secondary schools, except that the few boys who read for university scholarships are rarely found in an elementary school. This part of the school-science is often most unsatisfactory. The work is bookish and uninteresting. Fierce competition forces up the standard, and many things are included of which no schoolboy possesses, or can possess, a real knowledge. Even here, welcome signs of improvement can be perceived. Some of the Cambridge colleges in

particular show by their regulations and questions that they are seriously taking into account the tastes and opportunities of the schoolboy.

School Course in Science

8–12.—Object lessons in natural history and other subjects, gradually becoming to some extent connected. Drawing.

13–14.—Elementary experimental science. Experimental geometry, mensuration, decimal arithmetic. Weighing and measuring. Drawing.

15–16.—Experimental science, becoming more and more quantitative and systematic. Mathematics and drawing.

17–19.—Preparation for university scholarships. The technical school and university college are alternatives.

The ages quoted are approximate only, and no importance is attached to the exact figures. As a rule, the secondary school is later all through than the elementary school; in this the secondary school is the wiser or more fortunate. We commonly begin everything too soon, work at it too fast, and come to an end too soon.

The conditions of natural growth

The fact is that many teachers and organisers of education imperfectly realise that boys and girls are actually alive. We treat them as sacks to be filled with 'useful' knowledge, not as living things which cannot be shaped or made, but can only develop according to natural laws. Let us give them fair play, and not prescribe too much. Let us grant them not only food, material and intellectual, but those other things which, as Froebel reminds us, are no less necessary than food to the growing plant or animal—space and time and rest.

L. C. MIALL.

THE TEACHING OF MODERN LANGUAGES[1]

THE University of Cambridge in its examination for teachers certificates sets three papers, one on the theory, one on the history, and one on the practice of education. For a full and adequate treatment of the subject assigned to me, a similar division of labour would be required. First should come a historical survey of the field, a summary of the various methods advocated by educational reformers from Ascham and Ratke down to Prendergast and Gouin, with a running commentary on the merits and demerits of each system. A second chapter should give some account of the present state of modern language teaching, showing the number of hours devoted to it in different classes of schools, the attainments and qualifications of the teaching staff, the ways in which linguistic knowledge is tested by examining bodies, and lastly, the value attached to modern languages by the Civil Service Commissioners, the Local Examination Syndicates, College and University authorities. The third essayist should then sum up the argument, point out the defects of our existing methods and procedure, and trace these defects to their source. He would then be able to show us a more excellent way at once sound in theory and practically attainable.

A chapter, not treatise

The treatment I have propounded would demand three chapters, or rather a whole volume. It is doubtful whether any one man could be found competent to write such a book; it is certain that no such book has yet been written. The object, however, of these introductory remarks is not to inspire 'some bookish theorick,' who is likewise a practised teacher and has had wide educational experience, to write an *opus magnum*, but to define the scope of this chapter and apologise

This chapter a compromise between the ideal and the real

[1] It may be as well to premise that modern languages are limited in this essay to French and German, and that what is said of teaching French is intended generally to apply equally to German.

for its inadequacy and tentative character. The historical aspect of the subject does not lie within my brief, and in criticising present methods and systems, and suggesting remedies and reforms, I shall attempt to steer a middle course between the real and the ideal, to offer counsels of perfection that are not altogether utopian.

No discussion, however, of methods can be of much profit without some theory at starting. 'It is the province of a teacher,' says Mr. Thring, 'to know why he teaches as well as what he teaches and how to teach.' To say, 'I teach French or German because it is required for the London Matriculation, or is assigned 2,000 marks in the Army Entrance examination, or is demanded by the parents of my pupils,' is a clear confession of sophistry (in the Platonic sense); and even if we let the answer pass, we have still to inquire what is meant by a knowledge of French or German before we can prescribe rules for teaching it. Now the immediate objects aimed at in learning a modern language are these: (1) the power to read it; (2) the power to write it; (3) the power to speak it. There is also a fourth, intermediate between (1) and (3), the power to understand it when spoken, which, important as it is, we may in this preliminary survey disregard. No one can be said to know a language till he has attained this triple power, but on the order and value assigned to each faculty must depend in a great measure our method of procedure. For it is evident that it is only the minority of our pupils, the choicest wits, or those most favoured by time and circumstances, who will attain the full mastery, and we have to consider the greatest good of the greatest number, the case not only of the victors but of those who accomplish only one-third or two-thirds of the way towards the goal. It is a sound maxim of pedagogics that every school subject should be taught in such a way as to yield the greatest possible amount of training and discipline to the pupils, at whatever stage the study may be arrested.

The objects of modern language teaching and their relative importance

Now if we classify our three branches in an ascending order of difficulty, we shall have no hesitation in putting reading first, and of the remaining two most people would put conversation next, and consider composition the hardest task of all. Professor Spiers, indeed, considers reading 'child's play, or rather amateur's work, the pastime of a week or a fortnight in the midst of other occupations.' Without endorsing this rhetorical hyperbole intended by the Professor as a spur to raise his students to the higher level of French composition and French colloquy, we may yet accept it as a testimony to the

Reading 'die Hauptsache'

comparative easiness of reading *tant bien que mal* a French author. Looked at from the utilitarian point of view the order of procedure is not so easy to settle. And yet if we allow that the function of the teacher is to educate the man, not the diplomatist, or merchant, or commercial traveller (*der Mann, nicht der Fachmann*), we shall be led on this score also to assign the priority to reading. Undoubtedly it adds greatly to the zest of a foreign tour to be able to converse with the natives in their own tongue, but this is a luxury, and for most people a rare one. Books we have always with us, and to possess a free pass for French or German literature is not only an intellectual stimulus and solace for all, but for the man of science and the man of letters it is an almost indispensable necessity. The third aspect under which the problem presents itself must, in order to avoid repetition, be reserved till we come to deal with methods.

Let us assume provisionally that the aim of the teacher is to impart, or rather to educe, the ability to read a French author with ease and understanding, and consider what is the surest and speediest way of attaining this end. The naturalists tell us that, whatever our ultimate aim may be, common sense and psychology unite in urging us to begin with conversation.

We will take M. Gouin as the latest and most popular exponent of this view. 'A child,' says M. Gouin, 'with a Greek or Chinese nurse will at the end of six months speak their languages in a manner that will confound the greatest philologists in the world. If the child had had these philologists for teachers, it would at the end of six months have known practically nothing.' His method was the result of his personal experience. M. Gouin set himself to learn German according to the orthodox classical method. In ten days he had mastered the grammar of the German language. In four days he had learnt the thousand German roots. After this he could hardly make out a page a day of a German author. He then mastered Ollendorf, with no better result. Next he learnt by heart the whole German dictionary of 30,000 words, and revised it till he knew it so thoroughly that he could go through the whole of it in two hours. He was still no nearer understanding or making himself understood in German. Then at last he betook himself to the natural method, spent two months in teaching some German children French, and at the end of that time had gained so thorough a mastery of the language that in a philosophical bout at the Berlin University on a comparison of Descartes' formula with that of Hegel, held in

The Gouin method

German, the Frenchman was proclaimed victor. 'The Art of Teaching and Studying Languages' reads almost like the memoirs of a philologist Baron Munchausen, and we are in danger of overlooking the kernel of truth, so thickly is it overlaid with the husk of fiction. That young children learn a foreign language as readily as they do their own by the simple process of imitation is indeed indisputable, but there are various considerations wholly overlooked by M. Gouin and his followers that prevent us from jumping to the conclusion that whatever the age or development of his pupil, the language teacher should take the bilingual child as his example. In the first place, the gift so easily acquired is as easily lost. An Indian child who has learnt Hindustani from his ayah, after two or three years of residence in England does not remember a single word of the native tongue. Mr. Hamerton tells us, after a few years of English public school life his son had almost completely forgotten French, which he used to speak as his native language, just as French had obliterated the Breton that he spoke as a small boy, and Breton had driven out Provençal, the language of his infancy.

A language colloquially acquired is soon lost, and the acquisition is of little value educationally

In the second place, a language thus acquired by the purely imitative process has little or no educative value. It is a mere exercise of memory; there is no room for discrimination, reason, taste.

Thirdly, it must be remembered that the problem as it generally presents itself to the teacher is not how 'the infant new to earth and sky' had best be instructed, but how the boy or girl of ten and upwards can best acquire a new language, with this further proviso that the instruction must not be individual but collective. We are ourselves inclined to go further than this, and question the expediency, even were it possible, of furnishing every nursery with a French or German *bonne*. In the earlier stages of development confusion of tongues must lead to confusion of thought, and the polyglot Russian child, if we may judge from a limited experience, is less intelligent than the monoglot English child.

There are still other drawbacks to the Gouin method, as we shall see later on; but these objections at starting seem to us fatal to its claim to have discovered the Open Sesame of linguistics. Yet, in spite of all his pretension and charlatanism, we are grateful to M. Gouin for enforcing one sound doctrine, a doctrine as old, indeed, as the hills (or, at any rate, as Comenius), though buried for centuries beneath the scoriæ of classical tradition.

The kernel of truth in the Gouin method

'Every language must be learnt by use rather than by rules. Rules assist and confirm practice, but they must come after, not before it' ('Essays on Educational Reformers,' p. 140). Quick is expounding the theory of Comenius, and this theory contains all that is valuable in Gouinism. The first language lessons must deal with the most familiar objects of sense, and the instruction must be mainly oral. So far we and most educators will agree with M. Gouin in principle, however widely our practice may differ. But when we come to his esoteric doctrine, what M. Gouin would consider the differentia of his method, the linguistic series constructed on the model of 'The house that Jack built,' we are compelled to part company. If I want to remember the French or the German for the handle of a door it helps me not one whit, and it will not, I believe, greatly help a child, to have been led up to the handle by a series of natural steps or gradations. To connect *poignée* with *pugnus* will help me greatly if I know Latin; to connect *griff* with *grip* will help me whether I know Latin or not.

The problem that confronts the French master in a public school

And this brings us to the actual problem of teaching French, as it presents itself most commonly to the secondary teacher. The average boy now enters a public school at the age of thirteen or fourteen, knowing for his age a considerable amount of Latin, a modicum of French ranging from zero to a first class College of Preceptors' standard, and of English, grammar, composition, and literature, nothing save what he has gained indirectly through other studies or by the happy accident of a literary home. How is the teacher to tackle such a miscellaneous lot, classified as they will be solely by their attainments in Latin and Greek? A teacher of exceptional versatility and *savoir faire* might face his form with no other weapon than a blackboard and piece of chalk, preserve discipline by arresting and sustaining their interest, and produce at the end of the term results that are wholly unattainable by the old humdrum method. To genius all things are possible, but the teacher of average gifts and attainments is almost perforce driven to resort to the time-honoured tools of the reading and exercise book. These may be and often are (and herein we are at one with M. Gouin) as unprofitable and unprogressive as the treadmill, but that the reading book should as a rule form the basis of instruction, and that if rightly used a real grip of the language may through it be obtained, we in common with the so-called new methodists of Germany are firmly convinced.

How this is to be done we shall attempt further on to show, but first we would consider whether the preliminary training before a boy enters a public school should not be radically altered.

Reforms needed in the preparatory school

The first and most obvious reform we would advocate is to confine a boy's linguistic training till he is nine or ten entirely to English. In English he should learn to distinguish the parts of speech and to analyse a simple sentence. This point we need not labour; the arguments in its favour are fully and conclusively stated in Professor Laurie's Lectures on Linguistic Method.

English before French, French before Latin, and no Greek till a later stage

Secondly, the first foreign language to be attacked should undoubtedly be French, not Latin, as is now the usual practice, still less should the two languages be begun simultaneously. The arguments in favour of this second reform are overwhelming. French in the earlier stages is a far easier language than Latin; the inflexions are fewer, the vocables are nearer English, the order of words is nearly the same, the ideas are more familiar. Further, the boy who reaches the point of translating at sight an easy piece of French prose has gained an acquisition that is of some real value, and is not unlikely, even if his school studies are cut short at this point, to carry them on for himself. No one would venture to predicate the same of the boy who leaves school in the *Via Latina*. It follows as a corollary that Greek will not be begun in the preparatory school. But this is another story.

We have trespassed on the land of ideals (ideals not so unrealisable in the near future as the Headmasters' Conference would lead us to imagine), and must return to our actual fourth form boy knowing a fair amount of Latin, a negligable quantity of French, and not so much English as the page boy, if the latter has been to a decent Board School. But it is useless to cut out patterns without knowing the amount of cloth allowed us. A language master who has six hours a week at his disposal will obviously not pursue the same method as a master who has only one. We shall not be far from the mark if we assume that on the classical side, that is for four-fifths of public school boys, two hours a week are assigned to French and one hour to out of school preparation, and on the modern side five hours are allotted to French and the same amount to German, when both languages are taught, with a proportionate time for preparation. In one great public school with which I am intimately acquainted, the lowest

Time actually given and time that should be given to modern languages in secondary schools

form, beginners of ten or eleven, have one French lesson a week, a sop for the Cerberus of modern studies, alms for oblivion. But even two hours a week must appear to any save headmasters steeped in classical prejudice, an absurdly inadequate allowance. The American Committee of Ten, appointed to formulate typical time-tables for secondary schools in the States, accepted one and all as axiomatic the following propositions: (1) Every subject which is taught at all in a secondary school should be taught in the same way and to the same extent to every pupil so long as he pursues it, no matter what the probable destination of the pupil may be, or at what point his education is to cease. (2) Every subject studied at all is to be studied so thoroughly and connectively that it may provide a substantial mental training. The practical application of these principles by the Committee to the subject of modern language is to assign five, or at the least four, hours a week to French and the same amount to German.

What attainments may reasonably be expected of the pupil, and what may not

Two hours a week is, we repeat, a beggarly allowance, and all the French master can hope to attain with this limited time at his disposal is to bring his pupils to the stage of reading a modern French author with ease and profit. In the process of reading they will, if properly taught, have acquired a working knowledge of accidence and syntax and find no difficulty in asking their way to the station, or disputing the charges of an exorbitant landlord. But these same pupils, taught, as I would have them taught, to read and to enjoy, will fail to satisfy the Joint Board and Local Syndicates, and will probably be plucked even for the London Matriculation. They will not know the plurals of *bail*, *soupirail*, *vantail*, or *vitrail*, of *nouveau né* and *nouveau marié*; or the difference between *travails* and *travaux*, *œils* and *yeux*, *cieux* and *ciels*; they will not know the feminines of *doge* and *singe*, of *chasseur* and *demandeur*; nor will they be able to write out lists of substantives only used in the plural, and verbs only found in the infinitive; and even when asked to conjugate 'to go away,' interrogatively and negatively, they may be found lacking.[1] But they will certainly be able to interpret, and to put into good English, a French unseen; they will be able with two or three years' practice to understand a question addressed to them in French, and to write correctly a French dictation of

[1] I once asked a London University examiner how the matriculation candidates had done. 'They were a set of ignorants,' he replied; 'and I should have liked to pluck them wholesale. I asked the feminine of *loup*, and they wrote *loupe*, and the masculine of *biche*, and they told me *chien*.'

ordinary difficulty, and they will have more than a bowing acquaintance with the masterpieces of French literature, La Fontaine, Molière, Victor Hugo, and possibly with such writers as Renan, Taine, Sainte-Beuve, Saint-Victor, though in this branch of their studies I would not have them examined. Examination in literature is a direct encouragement to cram. *Non scholae sed vitae discimus*, and a boy thus equipped, though French examiners may pronounce him a *fruit sec*, starts life not indeed with a talent which may be put out at interest in the money markets of the world, but with a second heart, to borrow the famous phrase of Ennius.

New lamps and old: a model lesson

The French master of the old school who has had the patience to follow me thus far will assuredly, at this point, raise a protest, and, if I may interpret his sentiments, it will run somewhat as follows: You promise mountains and marvels, but your new lamps seem to me uncommonly like the old. I knew nothing of Ratke and Comenius; I take in neither the *Maître Phonétique* nor *Die neueren Sprachen*, yet the traditional method that I follow, guided by blind custom, as you will have it, or by plain common sense, as I should prefer to put it, takes, like yours, the Readers for its backbone. The bulk of my time in school is given to construing, all, in fact, except what is required for learning the grammar and looking over the exercises done out of school. The only difference I can perceive between our methods is, that by mine a large proportion of my pupils pass their examination, and by yours you are honest enough to confess few or none would succeed in passing.

The best answer to such a critic is to sketch a model lesson on the Reader. However rough and imperfect our essay, all *qui ont usé leur fond de culotte sur les bancs du collège*, and can remember what a construing lesson was like in old days, will perceive that the new method differs not only in its aims but in its procedure.

Let us suppose a lower fifth form, average age fifteen. They have had an hour's preparation, and bring up four fresh pages of their reading book, say, About's 'Roi des Montagnes.' The first five minutes will be given to revision. The master will see that the hard words in the last lesson or lessons are remembered, and that the whole form is intelligently following the plot of the story. He will then in one way or another test the preparation of the actual lesson. He may dictate or write on the blackboard a dozen words or phrases, and require each pupil to translate them on paper as he writes; or he may give the English and require the French to be written down; or he may ask an explanation of the allusions that occur in

the piece. Other expedients will suggest themselves to the versatile teacher for exacting the tithe of anise and cumin which he cannot afford to overlook, though his chief concern is with weightier matters. The real lesson will begin with translation, and he will put on A in the orthodox fashion. But he will not proceed with B, C, D, till the four pages are construed or the clock strikes. He will pick the four or five paragraphs which present special difficulties of grammar, style, or idiom, and so have time to spare for what mathematicians call 'riders,' the really educative and formative part of the lesson. First, he will insist on a translation instead of a construe; slovenly English and Gallicisms he will not let pass; if the problem is too hard for the class (and anyone who has attempted to translate for publication even an ordinary French novel knows how hard the problem is), he will come to the rescue, but he will not be content till he has hammered out a version that would read like English. Incidentally it will be a lesson and a most valuable one in English style. After the translation will come the questioning, which falls naturally under the two heads of matter and language. In a novel like About's there will not be much scope for questions on the matter, and on this account I myself should prefer to take some more solid book; but even in About's melodrama, a fifth form boy is likely to miss the more delicate strokes unless they are emphasised by questioning, and there is plenty to ask about the geography and history. The bulk of the questions, however, will be on the language, the grammar, and the vocables. The grammar, except a few paradigms, *avoir*, *être*, and the four conjugations, will have been learnt entirely from the Reader, and 'Eve and Baudiss' will only be used as a dictionary or book of reference. The vocabulary will grow like a snow-ball with each lesson. The boy will learn not only the words which occur in it, but their derivatives and their force in combination with other words. On to *sentir* will be tacked *sens* in its various meanings, *sentiment*, *sensé*, *sensible*; *pouvoir* the verb will suggest its use as a substantive, *puissance puissamment*, and also *n'en pouvoir mais*, and *n'en pouvoir plus*. *Injure* means 'abuse;' what then is the French for 'to abuse' and for 'to injure'? *User* means to wear out; what is the French for 'to use'? Of course only a portion of the work I have sketched can be accomplished in any single lesson, and the master will do well to make up his mind beforehand which portion he will elaborate. One day, for instance, he will lay stress on the accidence, another day on the syntax, and a third day on phrases and idioms. For in any case he must reserve the last

ten minutes for what is the essential *differentia* of the new method. Books are shut, and now begins the crucial test of reading with understanding, the experiment as to whether the class has absorbed and digested what they have just read. Put into French, 'Mrs. Simons showed her independence by refusing to budge an inch.' 'She swore she would never allow herself to be carried.' '*Qu'a-t-elle fait, Mary-Ann, dans ces circonstances?*' '*Que portaient les dames?*'

This is an invigorating mental gymnastic, and at the same time we are convinced that it will yield more definite and permanent results than the ancient system of gerund grinding. The essentials of grammar will have been acquired by the inductive method, generalisations made by the pupil himself, and therefore remembered. A vocabulary will have been acquired, not, as on the Gouin method, by juxtaposition of time and place, but by the natural affinities of language, a far stronger and more binding association for pupils who have reached the age of reason. Lastly, a foundation will have been laid for conversation and composition, though these with us are only secondary aims. This is nothing but an adaptation of Ascham's mimetic method. Ascham was the first educator to demonstrate both by theory and practice that the surest and shortest way of learning to write in a foreign language is by imitation. Professor Spiers, in the address from which I have already quoted, tells us that the pupil who wrote the best French prose he ever saw written by a boy had read but three books, one of which was 'Le Roi des Montagnes,' but these three he knew nearly all by heart.

All is in the reading book

In this rough sketch of a model reading lesson I have purposely reversed for separate consideration the more debatable questions.

1. *Pronunciation.*—Should a pupil who is put on to translate first be made to read the passage? I have myself almost abandoned the practice, and for this reason. The performer is executing, as it were, a *pas seul*, and it is almost impossible to keep the rest of the form awake while the performance is going on.[1] Gross mistakes may be passed round, but an English schoolboy's approximations to the finer shades of sound and tone cannot be gauged by a good

Pronunciation and phonetics

[1] Professor Spiers suggests to me a useful device for form reading: 'Stop a boy at the first mistake he makes. The duffers will break down before they have read half a dozen words. If anyone succeeds in reading five lines correctly, congratulate him and pass on.'

or bad mark. You are sure to have in your class two or three boys who are half French by birth, or have had a French *bonne*, or are gifted by nature with a delicate ear; put them on to read now and again, and read yourself. But I would trust far more to regular drill in phonetics. If a boy has been once taught how to shape his vocal organs, the standing difficulties of *u* and *eu*, of *ai* and *ais* will soon disappear. This branch of the subject has been so admirably handled in W. H. Widgery's 'Teaching of Languages in Schools' that I need only add one caution. While it is grotesque and monstrous that masters should pretend to teach French, especially to beginners, whose own pronunciation would be unintelligible to a native (and this, I fear, is still a true bill against a considerable proportion of our modern language teachers), phoneticians like the late Mr. Widgery are prone to run into the opposite extreme, and attach too much importance to perfect purity of pronunciation. What conceivable drawback can a slight Alsatian, or Belgian, or Swiss accent make to anyone except perhaps the diplomatist or lady of fashion? Our ideal aim is to know French in such a way as to hold converse with Frenchmen living and dead, not to be mistaken for Frenchmen.

2. *Philology.*—Should we attempt to teach philology in schools? Against any formal and direct teaching there is almost a consensus of opinion. It is acknowledged that the science is too vast, too intricate, and also too inchoate and unsettled to be a suitable subject for the young. It is no less true, though not so generally acknowledged, that a knowledge of philology is almost an essential for the teacher. Not only will it to some extent guide him in his methods, but it will enable him to explain seeming anomalies, and to show the reason of what must otherwise be learnt as a pure method of rote. To the pupil philology will prove the best of walking-sticks, though he cannot lean on it as a crutch.

Philology—a walking-stick, not a crutch

It has been laid down that French should take the priority of Latin, but, as things are and are likely to be for some years to come, French takes the back seat, and we can reckon on the tiros in French having studied Latin for some years. The French teacher may deem this a preposterous proceeding, but he must *faire bonne mine à mauvais jeu*, and turn it to account. For instance, in ninety-nine cases out of a hundred (if we except the names of trees and the abstracts in *-eur*) the French gender follows the Latin, and we can spare our pupils those endless rules of masculine and feminine terminations, with more endless lists of exceptions, which figure in

all the grammars. *Voyage*, *âge*, are the Latin *viaticum*, *ætaticum*, therefore masculine, but *rage* and *cage* are the Latin *rabies*, *cavea*, where the *-age* is not a suffix. Apparent exceptions like *feuille* will be removed by a small dose of philology. To take another instance, the simple statement that popular Latin said '*habeo scriptum epistolam*' but '*epistola quam habeo scriptam*' is the Aaron's rod which swallows up all the grammarians' rules for the past participle. Again, the French subjunctive, except in conditional sentences, runs almost parallel with the Latin subjunctive; and if the pupil has learnt in his Latin primer the syntax of final concessive, and consecutive sentences, the French master's task is very considerably lightened.

Uniformity of grammatical nomenclature

And here we would enter a plea for one obvious reform which has been often urged, but so far urged in vain. The heterogeneous nomenclature of English, French, and Latin grammarians is a stumbling-block to the learner far more serious than the diversity of weights and measures which occupied the last Headmasters' Conference, and one which, unlike the latter, it rests wholly with headmasters to remove. That a boy should be taught to parse the same form in one language as a past tense (I did), in another as a perfect (*feci*), in a third as a preterite definite (*je fis*), and in a fourth as an aorist or indefinite tense (ἐποίησα), is to pile Babel on Babel, and make confusion worse confounded. Sidney Smith's jibe against schoolmasters as pedants who inculcate the habit of 'credulously swallowing millstones with passive obedience' has not lost its sting. There is no need to adopt universally the Sonnenschein parallel series of grammars, and the arguments urged by Mr. E. E. Bowen against an authorised Latin primer have lost none of their cogency. But there is no reason why we should not borrow Mr. Sonnenschein's nomenclature, or agree to adopt one to be settled by a select Committee of Classical and Modern Language Teachers.

Philology as applied to teaching German

It may be as well before we pass on to add one or two suggestions as to the application of philology to the teaching of German. Here Latin will be of no help, except in the explanation of a few irregular genders, and our mainstay must be English. With a general proviso that English is no more derived from German than German is from English, we shall at the earliest stage point out the identity of *Dach* and *thatch*, *Dorf* and *thorp*, *Tier* and *deer*, *Zahn* and *tooth* (*tonth*), and then as we advance the less obvious connections of *Graf* and *reeve*, of *Glaube* and *belief*, *keck* and *quick*, *Urteil* and *ordeal*.

The commoner laws of consonant-shifting may be given, or rather discovered inductively by our pupils themselves, but we shall not trouble them with Grimm's law, which, as crudely stated in most grammars and class books, has almost as many exceptions as instances, still less shall we inflict on them scraps of Primitive Teutonic, Gothic and Old High German. It needs but a little ingenuity to convince a child that he half knows German to start with. To adapt the old doggerel :

> Fish, fowl, sea-wife, merman,
> Are good English and good German.

Whereas if we begin with the eight (or is it nine?) declensions of Ollendorf, he will think that he has exchanged the rods of the Ancient Latin Primer for the scorpions of the New Learning.

Rapid impressionists and perfect retainers

3. *Pace* versus *thoroughness.*—Without pretending to compose the standing quarrel between the rapid impressionists and the perfect retainers, we will attempt to display the two sides of the shield. The fatal flaw in all the mastery methods with which we are acquainted is their tediousness. 'Toute méthode est bonne,' so Voltaire tells us, 'excepté l'ennuyeuse.' A pupil who does five lines a lesson and remembers them perfectly, will undoubtedly progress more rapidly than a pupil who does a hundred lines and forgets ninety-nine. But we cannot guarantee that a pupil will master even five lines, much less that he will retain them in his memory, unless he is interested. On the other hand, we most of us know from sad experience that we may be deeply interested in a French or German novel and take in the general sense without having added to our permanent linguistic stores. The best way out of the dilemma would seem to be an alternation of the two methods. Some easy author, a novel, a modern play, a historical monograph, or memoirs, should be set for private reading, the difficulties being explained beforehand, or, better still, referred for solution to the master ; and the examination should be so conducted as to test a knowledge of the subject matter more than of the language, grasp of the general meaning rather than accurate scholarship. In this way boys will learn the art of reading ; they will gain confidence and find that they can swim in a strange element ; they will be convinced that French is a key that opens new treasure chambers, not as a cynic is reported to have said of Accadian, 'a language some fellow invented to make money out of.'

But while encouraging in every way discursive reading, and ranging over as wide a field as possible, the modern language master will at the same time enforce the close and accurate study of the masterpieces of modern prose and verse with no less strictness than his classical *confrère*. He will show that German particles are every whit as subtle and as hard to render as Greek particles; that French *netteté* and French *esprit* have no exact equivalents in English either for the words themselves or the qualities signified; that to translate into good English a page of Michelet, Taine, Renan, a lyric of Goethe, Heine, Geibel, is no less difficult than to translate a chapter of Thucydides or an ode of Horace, and taxes in as high a degree the powers of reason and imagination, demanding equally literary skill and poetic feeling. And if France and Germany cannot rival 'the beauty that was Greece and the glory that was Rome,' if modern literature lacks the statue-like repose of the antique world, yet in compensation it comes more home to men's business and bosoms. 'We are the ancients of the earth,' and if we must elect between Aristotle and Goethe, between Plautus and Molière, between Horace and Heine, we shall assuredly, as educationists, choose the latter.

Language and literature

Even Arnold, severe classicist as he was, and writing in pre-Reformation days, goes some way towards endorsing this comparative estimate. In an eloquent passage (143, letter to Mr. Justice Coleridge) he set forth an ideal of what a translation lesson should be, an ideal which the latest reformers have not improved upon. 'What a treat it must be to teach Shakespeare to a good class of young Greeks in regenerate Athens; to dwell upon him line by line and word by word, in the way that nothing but a translation lesson will enable one to do; and so to get all his pictures and thoughts leisurely into one's mind, till I verily think one would after a time almost give out light in the dark, after having been steeped as it were in such an atmosphere of brilliance. And how could this ever be done without having the process of construing, as the grosser medium through which alone all the beauty can be transmitted, because else we travel too fast, and more than half of it escapes us? Shakespeare for English boys would be but a poor substitute for Homer; but I suppose that I should be glad to get Dante and Goethe now and then in the room of some of the Greek tragedians and of Horace, or rather not in their room, but mixed up along with them.'

Dr. Arnold on modern languages

4. *Text-books and notes.*—This is a delicate subject to handle for one who is himself an editor of school editions, but I shall not be suspected of prejudice if I confess that personally, as a teacher, I prefer in most cases a plain text when such can be procured. Of course, if one is reading a historical play like the 'Wallenstein' trilogy, some help is almost indispensable. Few masters have the time, and no pupils have either the time or the opportunity, to compare the drama with the true history, and hunt up all the allusions to persons and places. To take the other extreme, a straightforward story like 'Le Roi des Montagnes' seems to me to need no annotation. The few obscurities that dictionary, grammar, and atlas will not solve can be easily elucidated by the teacher. Of this I am firmly convinced, that most modern editors err on the side of excess. They are far too learned. For instance, in a school edition of 'Wilhelm Tell,' probably the first German tragedy that an English schoolboy tackles, it is labour lost to prefix a monograph on the Tell legend that might be mistaken for a thesis written for the doctor's degree. And in the first German comedy he is likely to read, is it not absurd to trouble him with all the variants of Lessing's first and second edition? Again, I have little faith in the elaborate system of references to standard grammars which are now the vogue. In the first place, as already hinted, I am opposed to anything that would tend to establish a monopoly in grammars. Protection is fatal to progress. With free trade we may reasonably hope that the best school grammar of to-day will be ousted by a better, and seem to the next generation as unscientific as Noël et Chapsal does to us. In the next place, I have never myself come across the virtuous boy who could be trusted to turn up all these references. Thirdly and chiefly, it violates the principle we have laid down, that grammar should be taught inductively, that a boy should be encouraged as far as possible to discover for himself the rules of syntax. If he is at a loss and needs help, it is far better that this should be supplied by the teacher, or (as we have before suggested) that he should use the grammar as he would a dictionary, by reference to the index or table of contents. Another besetting sin of school editions, though less frequent than it used to be, is to take the form of an epitomised crib. When the translations are at the bottom of the page, the edition is almost tabooed for school use. Help should undoubtedly be given in regard to translation, and I do not object to occasional renderings of whole sentences which may serve as models for the pupil, but this help should generally take the form of hints on style

Annotated editions

—'this involved sentence must be broken up, this violent metaphor must be toned down or turned into a simile, the following line of Tennyson will suggest a suitable turn'—and never give a word or phrase which may be found in Contanseau's dictionary. For beginners a vocabulary is a harmless luxury, but the vocabulary should supply the primary meaning of words as well as those required in the text. There is still less excuse for the derivations with which many editors of French classics season their notes as from a pepper box. More advanced pupils should possess a Brachet's Historical Grammar and his Etymological Dictionary; to juniors the small amount of etymological knowledge that is desirable either as a guide to grammar or to fix the proper meaning of a word had better be imparted by the teacher.

Cribs have their use

5. *Cribs.*—This lion in the path of the classical master does not confront the modern language teacher to the same degree. If he is reading Faust or the Piccolomini he must be prepared to find some of his class in possession of Hayward's or Coleridge's translations and lay his measures accordingly. Van Laun's Molière is probably beyond a schoolboy's ken, and almost certainly beyond his means. Some of Erckmann-Chatrian's novels and Jules Verne's romances, which are otherwise admirably suited for school reading, must for this reason be put on the *index expurgatorius.* Or may we not turn the tables, and if there does exist a good and cheap translation of a good book, make use of it for a different purpose? I have found it a most effective plan for increasing a boy's vocabulary, and giving him readiness in writing French to make him get up a page or two of an easy author out of school with such thoroughness that he is able with the translation before him to reproduce the original French. The difficulty is to find any translations of popular modern authors that are sufficiently literal, and at the same time idiomatic, for our purpose. Any literary hack who has nothing better on hand is thought by the publishers good enough to translate a French or German novel. The inverse process, annotating an English work so that it may read off into French, has been attempted by M. Boïelle with Macaulay's Essays. The idea is excellent, but I wish he would try it with some author more within the capacity of the ordinary schoolboy. Another book I desiderate is a 'Golden Treasury of French and German Poetry,' with verse translations, *en face*, to be used for repetition. How translations by a master hand such as Rossetti's of 'Les Neiges d'antan' would bring home to the beginner, as no explanation could, the beauty of the original!

M. Bévenot has published a repetition book for the use of Clifton College on the plan suggested, but the selection is very meagre.

6. *Composition.*—I have sufficiently indicated how I would have the earlier stages taught. Oral should precede written work, and the work, whether oral or written, should be strictly imitative, a direct reproduction, or a reproduction in a modified form, of what has been read. If this principle is accepted, the usual exercise books—Chardenal, Bué, Aue, &c.—will all go by the board. The most conservative adherent of the old method must often have found his faith sorely tried. He will have seen a class who during the term have turned, with almost mechanical accuracy, sentences by the dozen on conditional and concessive conjunctions, when in examination they are set a simple piece of English prose produce some stuff like this: 'Quoique habile vous êtes, vous ne succederez pas si vous negligerez votres devoirs.' For the second stage of composition an original essay—I mean a *résumé* of what has been read in class, an account of what has been told them by the teacher, or a short theme on some closely analogous subject—is preferable to a passage for translation taken at random from an English author, though it might be advisable to give alternately with the essay a 'cooked' passage. Till the pupil knows how to express his own ideas in French, he certainly will not be able to express the ideas of others. I have seen more than once in the Joint Board examinations half a page of Macaulay's 'History' set for French prose to boys of sixteen who have had two hours of French a week. We might as reasonably expect a lower fifth form to make out an unseen from Pindar.

Composition should be based on the reading book

7. *Note-books.*—Note-books and marks are the fetich of English masters, and especially of English mistresses. The time taken in marking progress is time taken from making progress. The Alpine climber, the African explorer, does not usually carry a pedometer. To the energetic teacher, whose whole soul is in his work, marks are an unmitigated nuisance, and note-books at best a necessary interruption. In his most impressive periods, when he thinks he is holding the whole class spell-bound, he discovers that the virtuous slow boy is taking down a travestied version of what he said two minutes before, and the clever idle boy is drawing a caricature or composing Greek iambics. Yet note-books have their use, and a periodical inspection of them will partly check such abuses. The right way to use them is to require transcription from the rough note-book into

Pupils' note-books

tabulated note-books such as those prepared by Professor Spiers, under the headings 'grammar,' 'idioms,' 'homonyms,' 'philology,' where the pupil will enter what he has gleaned from each lesson. He will thus in time construct a grammar and a dictionary of his own, and be able when the phrase or construction recurs to refer back. If the ledger is not posted up, the master can be down on him. The practice of scribbling in the text-book should be severely checked, but the underlining of unknown words, and marking with an asterisk other difficulties, should be encouraged.

The modern language teacher demands more time for his work and a living wage for his pupils

To return to our starting point, the time at present allotted to modern languages in secondary schools is wholly inadequate. Half a century ago they were absolutely ignored, and we may trust that in another fifty years they will, by their natural worth and utility, have vindicated their proper place in the school curriculum. Can nothing be done to quicken the process, to induce headmasters even now to place them on the same level with classics and mathematics? One very simple change, if it could only be effected, would produce this revolution. Scholarships are the mainspring of our public schools; the yearly scholarship list is the *signum stantis aut cadentis scholæ*. Two Cambridge colleges do offer scholarships for modern languages, but there are too few to exert any influence on school studies, and are won by boys who have enjoyed special advantages, or have been withdrawn from their ordinary work for the last year at school in order to specialise. This is not what we want. But if in every scholarship examination a paper were set in French and in German, and then counted, like the English essay, as an integral factor in the award, not merely as an alternative to Latin verse, headmasters would at once set to work to reorganise their teaching, would see to it that modern languages were taught, not as at present by men who are 'one lesson ahead of their pupils,' but by properly qualified teachers, whether natives or foreigners,[1] and that the French teaching from the bottom to the top of the school was mapped out as systematically

[1] I have not touched on this burning question, believing, as I do, that it will shortly solve itself. All will allow that an Englishman who knows French thoroughly is *qua* Englishman a better teacher of English boys than any Frenchman can be. The number of Englishmen so qualified may at present be imited, but it is increasing every day, and will increase with the demand. To my friends the French professors who claim a monopoly, I am inclined to reply, 'Que messieurs les assassins commencent.' How many English teachers are there in all the Lycées and Collèges of France? I do not know of one.

and enforced with the same regularity as Latin prose. As it is, modern languages (except on the modern side) are regarded as an 'extra.' Proficiency in modern languages by itself will not gain a boy promotion at school, or, except in the rarest instances, a scholarship at college; and if he is good at classics he can afford to 'chance' his modern languages without endangering his promotion at school, or his scholarship at college, or, except indirectly, his prospect of honours in any university examination save the despised modern and mediæval tripos.

This is a chapter in a composite volume on Methods, not a treatise on modern language teaching, and instead of attempting to summarise the somewhat discursive observations it contains on method, I prefer to give, in an abridged form, the excellent rules laid down in the 'Maître Phonétique.' They ignore, indeed, the literary aim on which I have laid special stress, but with this proviso they seem to me an admirable exposition of the new as opposed to the classical method:

Postulates of the new method

1. Begin not with French classics, but with the language of modern everyday life.

2. The first care of the master should be to render the sounds of the French language perfectly familiar to the pupil. He should employ phonetic transcription.

3. The pupil should next be led to study the most usual words, phrases, and idioms in dialogues, stories &c. as interesting as possible.

4. Grammar in the first stage should be studied inductively as a corollary to the reading lesson.

5. Attach, as far as possible, the French word or phrase to the thing signified, not to the English word, by means of object lessons, lessons on pictures, &c.

6. For composition, require first reproductions of the text read, then of stories and anecdotes told *viva voce*, then original essays on closely analogous subjects. Translation from English into French should be the last stage of all.

Bibliography.—A good list of books will be found at the end of W. H. Widgery's 'Teaching of Languages in Schools,' 1889. I may mention in addition T. Prendergast, 'The Mastery of Languages, or the Art of Speaking Foreign Tongues Idiomatically,' 1864; C. Colbeck, 'On Teaching Modern Languages, in Theory and Practice' ('Cambridge Lectures,' 1887); S. S. Laurie, 'Language and Linguistic Method in the School,' 1890; Stieler, 'Zur Methodik des neusprachlichen Unterrichts,' 1891; M. Bréal, 'De l'Enseignement des Langues Vivantes,' 1893; W. Vietor, 'Elemente der Phonetik des

Deutschen, Englischen und Französischen,' 1884; Paul Passy, 'Premier Livre de Lecture.'

I may venture also to refer to three papers in which I have treated more fully some points only glanced at in this essay: French Class Books, a paper read before the Education Society ('Journal of Education,' July 1883); Modern Language Teaching and Modern Language Teachers, a lecture delivered before the University of Cambridge ('Journal of Education,' September 1884); A Construing Lesson, a paper read before the College of Preceptors ('Educational Times,' July 1895).

F. STORR.

VOCAL MUSIC

A TRAINING in vocal music in the form of the choral class is becoming generally recognised as a desirable if not a necessary element in a general education. In many secondary schools it is still too much of a Cinderella in the First Act, a drudge to be harried at times to eke out the school entertainment; but in many other schools, where the slipper has been found to fit, the subject is welcomed as one upon which time may be profitably spent. It makes for cheerfulness, breeziness, good fellowship, and entertainment; it cultivates the æsthetic sense, it is a healthy exercise, and while even a mildly systematic course may be made to yield intellectual exercise and pleasure, it has some indirect ethical value and formative influence inasmuch as it vivifies words, and stirs and intensifies sentiments as nothing else in school life can. A robust school song, a folk song, a beautiful melody with really good poetry, alike touch the coarsest and the most refined. Not many of us would know the songs and hymns that have exercised extraordinary influence over civilised nations were it not for the tunes to which the words are welded. These are trite observations, called for here only to emphasise a doubt whether vocal music, as at present it is often treated in schools, utilises as fully as it might an exceptional educative force to be had, as it were, for the asking.

The value of vocal music training as a school subject

It would be unreasonable to plead for a wider recognition and a systematic treatment of the kind of vocal music study indicated, if it called for the devotion of anything like the time which the practice of instrumental music demands from its votaries. The power to sing simple music is so common that it may be fairly described as the heritage of all. A weekly practice of an hour serves to develop young people with ordinary capacity quite sufficiently for all school purposes. Even if the skill attained in school is not used practically in after life, the

The limited time required for vocal practice

susceptibility to musical effects thus aroused in youth enables the adult to follow and enjoy music in almost every form to a degree that is impossible to those unfortunate persons whose ears and voices are totally neglected in early life.

Vocal training the best foundation for a musical education

Musical educationists are agreed that the foundations of a musical education are best laid in vocal training; a training not necessarily directed to voice production or development, but employed solely as a means of awakening the mind's ear. Hence young professional students in the Royal Academy and the Royal College are made to go through the mill of the sight singing class even though their voices be cracked or feeble, and their aim in life be only to play an instrument or to compose. Instrumental practice cannot be relied upon alone to produce the desired effect on the ear.

Singers have to think sounds; instrumentalists find places

An instrumentalist is not forced to conceive a sound before he plays it, but only a place, a fingering on his instrument. A girl may strum on the pianoforte for years without connecting sounds in her mind with the notes she looks at. She may not be able to sing the simplest melody at sight away from the pianoforte. But the singer must conceive a sound in the mind before singing it. Singing is a constructive, creative act of the mind.

All the school should learn vocal music

The amount and character of the vocal training possible in different schools must vary considerably. On the whole it is best that all—*minus* the hopeless few—should learn. Only in this way can a sort of public opinion be formed that vocal training is a regular and recognised part of a general education, and not a speciality of the gifted few. Wherever possible, a select choir, composed of the best material, should supplement the collective class singing. The best, by this means, are encouraged, and the next best are stimulated. This is the organisation in many of the best boys' and girls' schools in the country. In some schools—probably because the poverty and not the will consents—the singing class is an optional 'extra,' and more often than not leads a precarious and futile life.

Difficulties of classification

If the whole school is taught, difficulties of classification are certain to be encountered. It is rarely possible for either a day or a boarding school, constantly in the throes of preparation for examinations in which musical skill does not count, to upset all the customary classification in order to accommodate the singing class. The singing teacher can do no more than recognise the inevitability of the situation, and

must find comfort in the tribute paid to his ingenuity and skill, by the mere fact that he is confidently expected to succeed under the circumstances.

A singing class only for recreation not to be despised

If a school singing class is designed merely to provide a little recreation, and there is no desire or means to teach more than a smattering of musical knowledge, not much method is called for. Care may be taken of the voice, good sterling unison songs may be freely sung by ear and stored in the memory, the singing may be in tune, the words well enunciated, and much enjoyment may be experienced all round. Such a class is not to be wholly despised. At least it may create a pleasant association, and at best it may be a stepping stone to a more intelligent study of the subject.

What a systematically taught class must do

A course of vocal training that deserves to be described as systematic must be governed by the necessity of continually bringing pupils into conscious contact with the foundation elements of music, and must take account of the receptiveness of pupils with only average musical capacity. If these matters are not fully considered, teaching, however earnest and painstaking, must result in disappointment.

The main elementary facts of music, considered apart from their notation, are :

1. The relations of sounds to one another that go to form the scale, major and minor.

2. Rhythmic pulsation. Varied accent. Divisions of beats.

Pitch and relationship of sounds

Then it must be noted that every single sound can be considered in two distinct aspects : it is an absolute pitch and a relative pitch. The sound called G is a definite point in the region of absolute pitch, but this same G may be one of seven or more peculiar relations in various keys. 'God save the Queen' is a set of relations. It is still the same tune, no matter from what absolute pitch it is started. The relations alone are apprehended, and alone form the identity of the tune.

What average capacity can accomplish

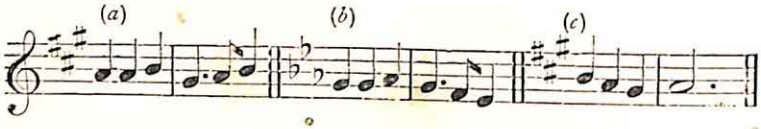
A fair estimate of the power of average capacity can be reached through a consideration of the psychology of the act of listening to music. This may be summarised as follows :

(*a*) We are conscious of a sound,

(*b*) We *temporarily* retain it in our memory,

(*c*) We automatically compare this memorised sound with others that follow, and so realise the relations that make a tune.

If the following passages



are played over without break, a lack of congruity will be felt by the meanest capacity. If the first phrase (*a*) is not in some way retained in the memory while the second phrase (*b*) is being performed, the unrelatedness of the latter to the former would not be noticed. Persons said to have no 'ear' are generally deficient in this power to memorise a sound, and *à fortiori* in the power to compare sounds.

Power to imitate musical sounds a common faculty

The ability to realise with the ear, and to immediately imitate with the voice, single sounds or short melodic phrases is a common faculty. It does not arise solely from the observation of, and power to recall relations, because only the few can be trusted to imitate relations in a key or set of pitches other than that in which they are presented to the ear.

Permanent memory of absolute pitch not necessary

This indispensable ability to temporarily keep in mind an absolute pitch must not be confounded with that permanent memory of absolute pitch which is the rare and special gift possessed by the few, or an attainment gained only by highly specialised training. The absence of this sense is no bar even to the career of a musician. Many excellent musicians do not possess it, and the various demands made upon a busy professional singer can be adequately met without it.

The common ability to quickly imitate is a possible difficulty in class practice

The rapidity with which a musical sound can be realised and imitated by even an untrained singer creates one of the baffling difficulties of the conscientious singing-class teacher, who has in mind the education of the individual, and not merely the progress of the class as a whole. The indolent, more often than not quite unconsciously, find the line of least resistance instinctively, and do nothing but follow the more active-minded singers. They thus never exercise their powers of conceiving sounds before singing them, and may acquire very little independent skill after years of practice. To get next to some one who can read well is a familiar manœuvre of the weak sight singer. Collective practice should be constantly supplemented by individual performance. This necessity,

it must be confessed, is often a severe test of the earnestness and good tone of the pupils, and of the power of moral suasion on the part of the teacher. Young children are easy enough to deal with because they are not self-conscious, and they cheerfully blunder before their fellow pupils. But girls in their teens are more difficult to rouse; often even the naturally gifted are overcome with diffidence and a fear of failure before others. In such cases it is the business of the teacher to take care that individual performance, however inadequate, is received with a kindly and sympathetic attention by the class and duly rewarded with praise for the moral courage shown. In this way individual performance may be faced without paralysing excitement or nervousness, and a general progress in skill will be insured.

The power to associate names and musical relation another common faculty

Another common faculty that may be noted here is that by which singers can associate syllables—sol-fa syllables—or numbers with the relations that comprise the scale, not as mere names but as powerful mnemonics of effect. The tonic sol-fa notation is the *ne plus ultra* of this application of syllables, and the 'movable doh' system used in connexion with the staff is another popular utilisation of this potent force.

Methods of teaching compared

The methods of class instruction in singing and the theory of music that find most favour in schools are based either upon the mnemonic association of syllables and effect described above, or they depend upon a blend of the observation (mostly very imperfect) of the interval from one note to another, with a passing regard to key relation of notes, and a vague feeling that can be cultivated for approximate pitch. The great advantage of the former method is that it avoids the necessity of weighting the class with complexities of theory early in the course, and that it succeeds with the majority of pupils; whereas the latter method, if it is at all conscientiously carried out, demands wearisome attention to many difficult points, and in the end only succeeds, in school classes at least, in making a sharp minority more or less good guessers in note reading.

The tonic sol-fa system if used should lead to the staff notation

The quickest and surest results in sight reading are to be obtained from the tonic sol-fa system. But the letter notation used in this system is not the universal notation of music. If school life only had to be considered, the tonic sol-fa notation of itself would suffice to meet all the needs of most school singing classes. But in secondary schools, where children stay on for their education well into their

teens, and will probably find that music will play some not inconsiderable part in their social adult life, it should not be possible for a girl or boy to escape acquiring an elementary knowledge of the staff notation that will serve as a sound basis for future study and practice.

The best compromise between the convenient and the expedient is to use the tonic sol-fa system in the elementary lessons, and apply its principles to the explanation of the staff notation at various stages in the more advanced lessons. Although this plan may seem to be wasteful of time in requiring the study of two notations, it is not really so, because the tonic sol-fa notation is ancillary to the staff, and provides a luminous and smoothly graded path from the beginning to the end. If for any reason it is preferred to use only the staff notation throughout, the 'movable doh' system offers, on the whole, the most rational and practicable course. The so-called Fixed Do system, in which the sol-fa syllables are used to name absolute pitch, instead of key relations, is a possible but difficult alternative. In the elementary stages of learning it involves a laborious study of intervals, and experience has proved that in classes composed of pupils with ordinary capacity and limited time, little success can be looked for by this means.

The Fixed Do method

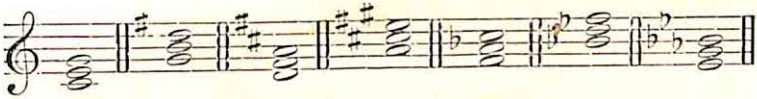
Standards of attainment to be regarded as fair and reasonable must vary considerably with the constitution and circumstances of classes. If the junior preparatory schools all taught vocal music systematically, it would be comparatively easy in a secondary school to produce results that could be pronounced excellent. But it is too often the case that schools for children over ten years of age have to deal with ears and voices entirely untrained. It is necessary, therefore, to prescribe a plan or code to embrace all stages.

Standards of attainment to be aimed for

The following graded requirements are offered as indications of acquirements to attain which it is desirable to shape the teaching, and as suggestions of a means of testing a class collectively as well as individually. But even with expert teaching not more than half the pupils of a class miscellaneously gathered together could be expected to perform individually all the tests suggested. Some will fail at one point and some at another. The highest grade represents what an upper form high school girl of average musical ability should know and be able to do if the study of vocal music has been undertaken as a school subject and not simply as a recreation.

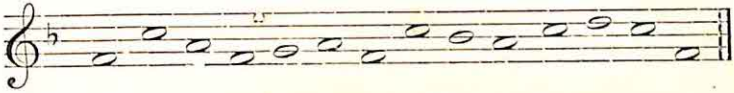
GRADE I

1. State what major keys are indicated by the following signatures. Sing easy passages slowly pointed on a staff prepared as here shown. Point the places of notes called for by pitch names (as C, D, E, &c.) and by scale names (as *doh*, *me*, &c.)

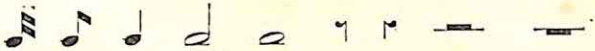


2. Sing slowly, using the sol-fa syllables, an easy passage written in any of the above keys.

Example:

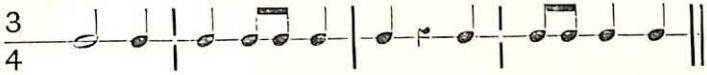


3. Answer questions on the relative values of the following notes and rests:



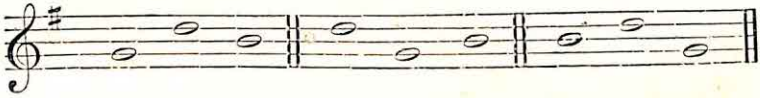
and sing on one tone an easy rhythmic phrase written in $\frac{3}{4}$ or $\frac{4}{4}$ time.

Example:



4. Tell in which order the sounds of a key chord are performed.

Example:

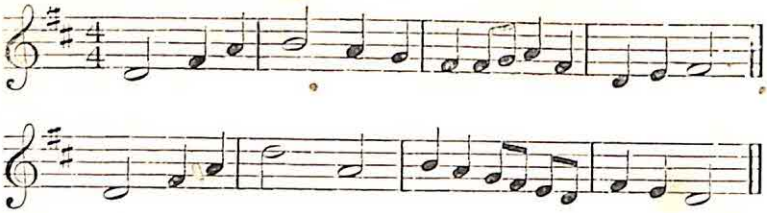


GRADE II

1. Follow pointing on a prepared staff (*i.e.* a staff with key chords written as above in Reqt. 1, Grade I.) with fair rapidity. The test to include wide leaps.

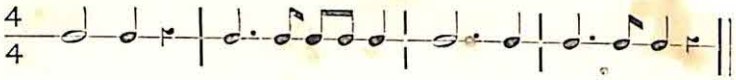
2. Sing at sight an exercise combining easy time and tune

Example:



3. Sing on one tone a time exercise, including commonly used rests and dotted notes, in easy rhythm.

Example:



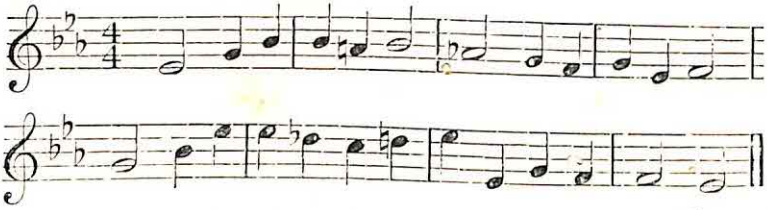
4. Tell or write the positions of the sol-fa names of easy phrases composed of diatonic scale sounds. The key to be stated if the answer is written.

Example:

GRADE III

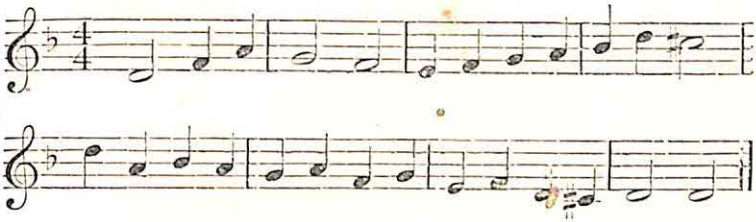
1. Sing at sight an exercise including accidentals easily approached and quitted.

Example:



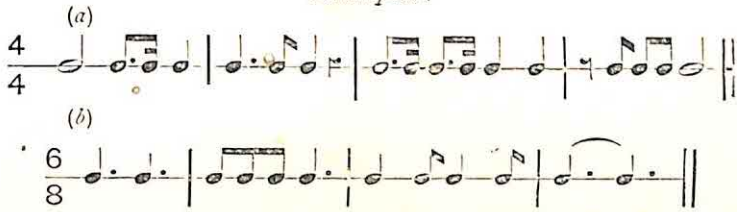
2. State the minor keys shown by given signatures. Sing a harmonic minor scale upwards and downwards. Sing at sight simple passages written in a commonly used minor key.

Example:



3. Sing on one tone a time test containing dotted notes and rests in any of the simple times, and another test in easy compound time.

Examples:

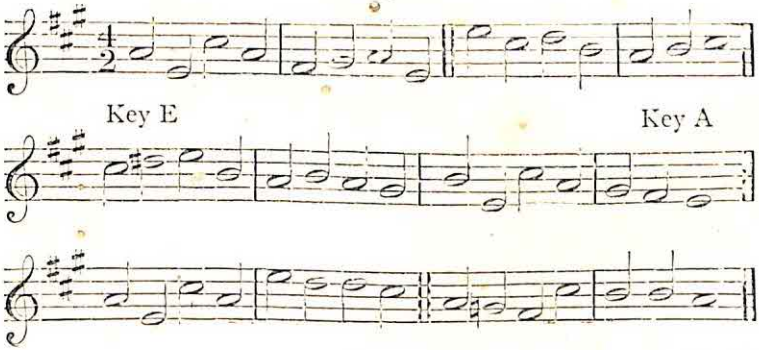


4. State the sol-fa names, or write notes on the staff to stand for short diatonic phrases performed. The key to be named if the exercise is written.

GRADE IV

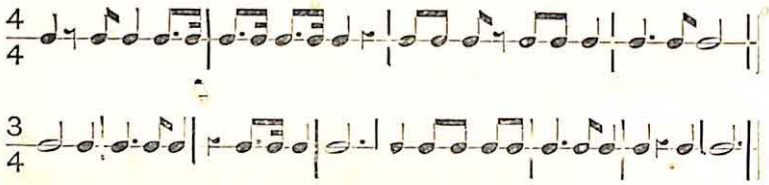
1. Sing at sight a plain tune written in any of the most used keys. If change of key is introduced, it should be noted for the assistance of the singer.

Example:



2. (*a*) Sing on one tone fluently and readily a rhythmic exercise with simple beat divisions. (*b*) Re-write rhythmic phrases, halving or doubling values.

Examples :

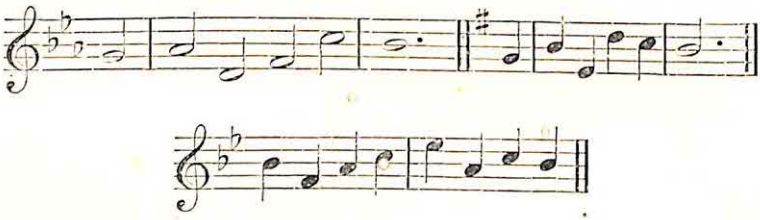


3. Tell or write the position on the staff of the sol-fa names of easy phrases performed. The key to be named if the exercise is written.

Example :

4. Write any major or minor key signatures.
5. Transpose simple phrases from key to key.

Example :



(Transpose all to Key F or Key D

6. Hold a prepared 'second' or alto against a treble part sung or played.

7. Hold a tone of medium pitch steadily and clearly for eight or ten seconds.

8. Sing slowly up and down the scale, using the sol-fa names, with a sharp, distinct attack of the consonants, and a careful attention to the proper formation of the vowels.

Girls' and boys' voices compared

The voices of very young girls do not materially differ from those of boys at the same age. But at a later stage the boy's voice develops a somewhat special *timbre*, and girls' voices call for considerable care.

Girls' voices call for special care

The training in a school singing class composed of girls should not impose any strain upon the voices, and should be directed entirely to the formation of good habits of delivery. Girls often have painfully feeble voices, and show an almost invincible reluctance to learn how to acquire a full tone. On no account should they be urged to sing louder by mere muscular effort in the throat. The training must be directed to secure free, deep breathing and control of breath in delivery; the cultivation of resonance by the shaping of the mouth and upper part of the throat, which is by far the most effective and economical means of developing roundness and sweetness of tone; a precise and tuneful attack of the notes to be sung (as opposed to a leisurely, scooped approach); pure quality and fullness of vowels, and the clear enunciation of consonants. Two highly important studies in vocal training, namely, the supply and management of breath and the control of the mouth, can therefore be freely worked at in the singing class without fear of harmful strain, and, moreover, the lungs get healthily aired and exercised, and the utterance of speech is improved. A third study, the development of the larynx to great flexibility and the extension of compass, can very well be postponed.

Boys' voices can be more freely treated than girls'

Boys can be more unreservedly trained. Their voices at the age of thirteen or fourteen are fully developed organs, and, until they show symptoms of finally breaking, can safely undergo a complete course of cultivation. Boy choristers in cathedrals are familiar instances of the extent to which this training can be carried. Boys with untrained and unpromising voices often develop tone and sweetness under training with surprising rapidity. They rarely possess effective alto voices, and it is a mistake to force them to sing habitually low without regard to their real compass. They do their inevitable shouting at play with the lower register carried up too high, and in an untrained state seem to have an extremely limited and low compass. But when the high register—the upper floor, as it were—is once discovered, quick progress becomes possible. The practical point in training is to take constant care that high notes (say E, fourth space, treble clef) are produced with ease and fullness. A boy with a good natural voice is the best pattern for the other

boys; they fall into his way and method of production instinctively, and secure power by resonance rather than by muscular effort.

A tendency to sing flat is often shown in school singing classes, and constitutes one of the most vexing difficulties that a teacher has to encounter. To trace the real cause of the evil, and to devise a ready-means of alleviating it, are not easy tasks. The flatness may arise from fatigue, bad posture, indolence of one or two especially faulty singers (who will almost certainly leaven the whole mass), the use of music too difficult for the class to remember or to read, wrong voice production, the bad sorting of voices, naturally low voices ineffectually straining for high notes, and the like.

Flat singing, causes and remedies

The remedies are: the provision of a correct pattern, attention to exercises in voice production and exact attack—the precise imitation of single sounds is good practice—the silencing for a time or the complete elimination of flat singers, attention to attitude, good breathing and delivery, the use of simple music well within the average compass, and, sometimes, the abandonment of the music in which flatness was exhibited. Wherever part-singing is possible, the voices should be sorted according to their natural qualifications. If all the music in use is for unison singing, it must not be high-pitched, or the singers unable to reach high notes must be warned not to attempt to sing them.

These measures, and a general stirring up of the class to desire to sing in tune, will be found useful, if they do not effect a permanent cure. Instrumental accompaniment helps to keep up the pitch, but the true test is the power of singers to sing in tune without such aid.

The success of the whole purpose of a singing class depends, finally, upon the ability of the teacher to interest and manage the pupils. Interest in the work should be maintained by ever-varying modes of presenting musical facts, by inducing individuals to perform tasks, however simple, in the presence of the class, and by refraining from teaching any topic beyond the wearying point.

Success depends upon the teacher

Many musical facts can be effectively taught by means of tunes already well known. Thus, a class sufficiently advanced will take keen interest in a discussion as to how the tune 'God save the Queen' must be written; the key signature, the time signature, the barring, the value of the notes, and their tonal position provoke useful speculation. If the circumstances permit, the class should be sorted into sections known as

Means of interesting a class

A, B, C, &c.—not because it is practicable to give regularly separate lessons to each section, but so that the teacher may at any moment appeal to the weaker or stronger pupils of the class. The upper sections should be the first to learn a new piece. As the weaker pupils will learn mainly by ear, it is better to give them a good pattern than to allow them to handicap the first efforts of the stronger pupils.

The proportioning of topics in a lesson

The proportioning of topics in a lesson must necessarily be governed entirely by the aims and circumstances of a class. Where the teacher is an enthusiastic expert, and anxiously desires to make his pupils good musicians, there is a danger of his teaching dropping too exclusively into a rut of voice-training exercises, dry theory demonstration, and sight-singing studies. Songs, and all the pleasure, interest, and culture they bring, are neglected, and the pupils are naturally apt to grow weary of the work. On the other hand, where the teacher is a non-expert, or not inclined to trouble about systematic treatment, the exercises are neglected, and the class gives nearly all the time to acquiring pieces chiefly, if not wholly, by ear. It is the business of an intelligent and conscientious teacher to find some rational mean between these two extremes. He should set out with a determination to deal incisively with at least one elementary educational topic at every lesson, and should treat the songs and pieces as educationally as he can without destroying interest in them as music.

Plan of an ideal lesson

An ideal lesson of forty-five minutes might be planned as follows :

	Minutes
1. Voice exercise	3
2. A point of theory (tune), followed by practice of an exercise	10
3. Questions and individual singing	4
4. Time exercise	5
5. Ear exercises, naming notes played	3
6. Songs	20
Total	45

Readiness saves time

Everything should be ready in a class. No time should be frittered away on anything but the work to be done. The teacher must be cheerful, alert, and encouraging. If he obviously enjoys giving the lesson the class will catch the infection.

The choice of music to be studied calls for the utmost care. In the first place nearly all of it must be well within the musical capacity of the class, and the remainder may be a little ahead in order to make progress and stimulate interest. Good unison songs that can be freely memorised and sung away from the class for pure enjoyment should form part of the selection. National songs and sea songs should not be neglected, especially in classes of boys. Although much of the music designed for use in schools is unworthy of attention, publishers have recently vied with one another in providing excellent music and words adapted to every possible school need.

Choice of music

In studying new music that presents difficulty to the class, the practice should blend sight reading and ear or imitative singing. Phrases should be well patterned and imitated, partly from memory and partly read from the notes. In this way good taste in execution and a better artistic result can be more quickly secured than by ineffectual gropings at sight singing, which often leave wrong impressions to be afterwards fought against. Nothing is more difficult to get rid of than a wrong note once memorised.

How to study new music

In schools where much tuition in playing instruments and in solo singing is going on in addition to the singing class, an effort should be made to co-ordinate the whole instruction. The singing-class teacher is apt to think that as so many of the pupils are learning instruments the theory of music need not occupy much attention, and the various music teachers are all too busy with their specialities to even know one another, let alone to confer together; and, as a consequence, a pupil over whom large sums have been expended for musical training, may emerge from the school with many scraps of miscellaneous information but no real understanding of the first principles of the art. It is wasteful and ineffectual, and besides not reasonable to expect a teacher of an instrument or a solo-singing trainer to dribble away valuable time on hurried hand-to-mouth instruction in theory to individual pupils to the neglect of his speciality. The theory of music and the details of notation are best and most economically taught in a class specially formed for the purpose.

The co-ordination of various music studies

W. G. McNAUGHT.

FORM MANAGEMENT

THERE is a childish tale of an old gentleman of precise manners who, as he was leaving a friend's house, was suddenly addressed by a parrot in these words: 'Before you face the night air be sure you wrap up well;' and who urbanely replied that 'the advice was excellent, if only it was based on an adequate knowledge of the circumstances.' I feel that the intelligent reader, being offered suggestions on an important professional matter, may similarly inquire for credentials. I wish accordingly to state that my only claim to advise is based on fifteen years' practical experience in a public school; and that this claim is subject to some serious deductions. For my experience is confined to one kind of school; it is several years old; and it was acquired at a time when there was much less general interest in educational methods. Our generation of schoolmasters entered on their duties without much reading or thinking about the difficulties of the teaching art; training for secondary schools was hardly thought of; we rushed gaily in where experts now fear to tread. We made many mistakes; some we discovered, and tried to amend, as time went on; some when it was too late, and we had given up teaching; and many (no doubt) were only discovered by our pupils and our colleagues. Still, however limited, experience is always experience: and an old schoolmaster, if he will do his best to be severely practical, may be able to give some hints which will not be wholly useless to others who are entering on the same professional work.

'Experientia docet'

My subject is the discipline or, more fully, the general management of a form by the teacher. Discipline in the narrowest sense, namely the maintenance of order and the right method of dealing with offences, is obviously important enough, and raises many points of detail which will have to be considered. But it would be a mistake to confine ourselves to the narrowest sense. The power to deal rightly with order, and the

'Discipline' a word of wide import

offences against order, is so intimately bound up with other qualities, ideals, and duties of a teacher, that it will be needful to give to Discipline the widest interpretation, and to review in some sort the general conditions and methods of handling a class. And this again is so much affected by the spirit in which a teacher addresses himself to his task, that we may profitably begin with a few words upon this point.

Consideration on entering the teaching profession

Those who have the opportunity of seeing young men when they are leaving the university for school appointments, are accustomed to hear them talk freely of the advantages and disadvantages of the work that lies before them. The school is in a nice situation: the headmaster is a good fellow: there is fishing, or cricket, or lawn tennis, to be had in the neighbourhood: on the other hand, the pay is not much; and the elementary teaching will of course be drudgery. Or again:—there is no particular opening available at present: something must be done to earn a little money: schoolmastering is handy, and can be tried for a term or two: meanwhile one can look about; at any rate no special preparation is required; and 'in the Easter vacation one can run up and see the boat-race.' Such are some of the considerations which emerge in talk; and though one need not infer that there is nothing deeper behind, yet there is often very little sign that the aspirant adequately recognises the importance, the difficulty, and the interest of the professional work which he has chosen. The men who 'mean to try it for a term or two, and make a little money while they look about,' are at once the most naïve and the most depressing. What would be thought of a man who entered the Church in such a spirit? They always remind me of the immortal Mrs. Lirriper's description of the 'Wandering Christians,' who go about looking for lodgings and making most precise inquiry, without a thought of permanently engaging them. I actually read the other day, in a rather fatuous article directed against Training, a complaint that those who now 'accept a mastership for a term to see how they like it and because an immediate income is an object,' would, if Training were required, be kept out of the Profession! It is surely permissible to hope that a somewhat higher ideal of the work of teaching might be presumed in those who seek it: and that at least the indifferent loafer might be discouraged by headmasters. I hasten to add that, if the beginner has any stuff in him, after a few terms' experience his tone is sure to change. He becomes interested in the work. He sees that a school is a place of many-sided life, where a man can be useful in

a hundred ways, and where every help tells. Those powerful agents, the human interest, the *esprit de corps*, the delight of the planter of seeds in seeing them grow, the pleasure of taking part in a business that is vigorously and beneficently active, seize hold of him, and evoke his energy. The school work, with infinite openings to make it more alive and efficient; the games, the debate club, the library, the choir, the museum, the school magazine, the popular lecture, the holiday expedition, the social life; these things, and many other such things, managed as far as may be by the boys, helped and advised by masters, offer plenty of scope to the benevolent activity of the young teacher. And if he takes hold of the chance, if he realises that the school is not a place where he may 'earn a little money, and look round,' but at once a field for the growth of intellect, interest, and character, and a little state which he may serve, then his whole attitude toward the work is changed for something wider and better. And with the change of spirit insensibly grows up a new influence and power, which deeply affects his capacity for dealing with his main daily work, the management of his form. No doubt, many of the difficulties of this work will still remain; and, with ever so good a spirit, he may still at first fail, now and again, for want of knowledge or other faculty. But he will be keener to detect these difficulties, and stronger to meet them; and a good many will before long have disappeared of themselves.

The effect of experience and the right spirit

For instance, when a man faces for the first time the twenty or thirty boys with whom he is to be in daily contact for weeks and months to come, it must always be, even for the dullest, the most self-confident, or the most phlegmatic of men, something more or less of an occasion. With what feelings will he approach the task? That he must get through as well as may be with his distasteful work? That would be rather a poor beginning. That he has before him a set of young wretches who will be sure to try and get the upper hand of him, but that *he will let them know he's there*? It may come to that in a week or two; but if it does, it will be more than half his fault. That he will make the idle rogues work, *even if the fur has to fly in the process*? The end is no doubt desirable; but the means proposed, the spirit shown in the thought, are nothing less than pitiable. Let us hope he will be better advised. These boys are trusted by their parents and the responsible headmaster to his quite unpractised care; and, within very wide limits, they are absolutely in

The spirit of the beginning

his power. He is bound by everything that can appeal to the commonest man's feeling of rectitude and honour, to do his very best for them, and give his whole soul to it. He should remember that everybody present is, in respect to the business in hand, more or less of a beginner; and that he is the most groping beginner of the whole roomful. The work, whatever it be, is certain to be hard to many if not most of those before him; and he is stationed there to find their difficulties—no easy task—and to help them in the right way. Whatever the lesson be, some boys have done their best: and if (as is certain to happen) it seem to the ignorant novice a miserably poor best, he must not misjudge it. Some have been slipshod, from natural helplessness, from frailty, from ignorance how to work, or from pure deliberate neglect. He is bound to distinguish; and yet, knowing really neither these boys nor any boys, he has nothing but the poor instrument of his unaided wits to solve the problem. Justice requires that the errors be corrected; but that the suspects, if there be doubt, should have the benefit of it. Some boys it is likely enough will soon begin to 'try it on,' and to behave badly; not probably at first, but before many days are out, when they have taken (as they think) his measure. Repression is necessary; yet here again, as we shall see in detail later on, in the manner of repression there are many things to be thought of, on which his mind is yet a blank. And he is not to be merely a judge, or a passive critic; he is to help actively in opening their minds, and awakening their interest. Whatever the lesson is, the same business, in the same place, under the same restraints, continued for an hour together, easily becomes tedious to the young. He must amuse, vary, illustrate, enliven, stimulate. He is at least ten years older, and far cleverer, we will assume, than any of them. He at any rate has enormous advantages over the best of them; and if he cannot so deal with the class that they shall like the work better because they have done it with him, it must be a poor use he is making of all his gifts and superiorities.

It is unsafe to diagnose a Form in the lump

Lastly, the young always want not only justice and enlivenment, but also kindness: and at least any man who tries can be kind. To some, of course, it comes by nature: others will be clumsy at it, and achieve it with effort. But the need is always there, and the attempt can be always made. It is his duty, and it is also his interest; for wisdom to deal with his boys is what he wants, and kindness makes wise. He wants their confidence; and

without kindness he will not get it. 'But these are obvious truths,' it may be said. I am thankful to say they are. And all I am asking is that they be allowed their proper weight in determining the young teacher's attitude and spirit when he approaches his task, and not relegated to that limbo to which obvious truths are dismissed by human confidence and impatience, and from which they are in the habit of emerging when it is too late to make the best use of them.

In passing from a general consideration of the desirable spirit which a teacher should cultivate towards his form to a more detailed review of the practical difficulties, the first points we meet with are the beggarly elements, the more material conditions of class teaching.

Material conditions; seating, &c.

There is no need to dwell on the necessity that the room where teaching has to take place should be properly lighted, warmed, ventilated, and furnished with suitable seats; for these things belong strictly to sanitation; and moreover, though much remains to be done, yet recent years have seen a great advance in such points everywhere. But it is manifest that on every ground the handling of a form is gravely affected by them. A room where boys (or girls) sit for an hour or more to learn ought to be reasonably comfortable. Attention is vitally important, and, old or young, we all find it hard to maintain for long. The difficulty should not be increased by carelessness or inconsiderateness in the school arrangement. The novice should keep his eyes open, and if he find things amiss, should try to better them. The best school seats are the isolated desk, locker, bench and back, in a single piece,—one for each. The longer seat, accommodating four or five, with table attached which reverses and becomes a back to the bench, is also workable; but it suffers from the defect that when the boy has the table to support books and elbows, he cannot lean back, and *vice versa*. I call it reasonable comfort that a boy should be able easily to change his position. We all do it instinctively when we are sitting still, and are awake; and the young need this relief a great deal more than their elders, as anybody with eyes can see. The 'fidgeting' (which so disturbs old women of both sexes) generally means this; and it should be met by providing for comfort, and not by the futile and thoughtless remedy of rebukes or penalties. I am not arguing for lounging or laxity, but for comfort. Of course it is good training to have to endure discomfort, but there is a season for all things, and the worst possible time to aim at this

sort of training of the body or the nerves, is when you are taxing the energies and the endurance for other ends.

As to arrangement, the essential thing is that the teacher, particularly if he is dealing with young boys, should see easily each member of his class, and what he is doing. If they sit at continuous desks arranged in rows, the back benches are largely hidden from view. In this case the boys, having free communication with each other, are tempted to substitute other interests for the lesson. With reasonable care, they will be able to pass notes, talk, draw pictures, run pins into each other, cut desks, read other books, even play games or prepare the next lesson, without any great risk of discovery. When the teacher can see them easily, there is much more danger, and proportionately less temptation. Moreover a good deal of inattention is inadvertent, or even involuntary; a boy on the back bench may be distracted from the matter in hand even against his will. If they are all full in view, not only does all this hindrance disappear or diminish, but they are much more accessible, as any preacher or public speaker knows, to whatever force, interest, or impressiveness the teacher's manner, words, and presence may possess.

There is one arrangement common in boys' schools, on which I should like to interpose a word; and that is the system known as 'place-taking.' For the benefit of any reader who is unfamiliar with it, it may be as well briefly to describe the method. At the first lesson of term, the boys sit in the school-order. Each question is passed down the line, and the boy who answers moves up above those who have failed to answer. At the end of the lesson the lowest boy is marked 1, the next 2, and so on. Next time they sit in the new order, and the shifting by merit begins again. At the end of the week these marks are added up; the written work is separately valued and added in; and the totals show the order for the week.

Place-taking

This plan appears to have much to recommend it. The change of place is a visible sign of success, as manifest and immediate as in a race, and the competitive instinct of the dullest boy is sharply appealed to thereby. The constant movement is in itself lively; it provides an outlet for the restlessness which young boys are prone to feel under the restraint of school; and it prevents wandering, drowsiness, and boredom. Moreover, it seems undeniably just that in a contest of knowledge he who knows should rise above those who do not, to be supplanted in his turn when another knows better than he. Nevertheless, I am strongly of opinion that it is a

bad system. It wastes time; it impedes teaching; it unduly accentuates competition; and it is often, if not always, exceedingly unfair. A lesson should be quiet; the constant movement and noise of place-taking are unsettling to all. The teacher should be drawing out knowledge, correcting errors, leading the young minds to find the truth, and exciting their interest; all this is obstructed and hampered by the race for places. There is much no doubt to be said for competition, with the British boy, as needful to evoke his full energies; but in any case it should be remembered that competition is not learning, and though the *habit* of learning may be acquired partly by its aid, to the *love* of learning it is necessarily alien and may easily be hostile or even fatal; and we should not forget that the primary schools do excellent work without it. It should therefore be always kept rather in the background; while the place-taking system makes it crudely obtrusive. And lastly this system is unfair. The full proof of this would take too long, but the main point is that the results are decided by chance to an extent which I am sure is often overlooked by teachers, and even by the boys who suffer. For example:

In one lesson thirty questions may have been passed, in another ten; yet the results are valued at the same rate. The questions at the end of the hour produce much more effect on the result than those at the beginning; for a boy may lose places steadily from 10 A.M. to 10.58, yet be marked top for a lucky shot at 10.59. The lower a boy is sitting, the more he has to gain by answering right; yet the more he is helped to be right by the bad shots of those above him. If the answer is not *a*, *b*, *c*, *d*, or *e*, it is probably *f*; and the boy who says *f* gains five places, though frequently he knows no more than the five boys who each lose one. Lastly, every answer is necessarily treated as if it were either right or wrong, when it is frequently neither; and the successful boy inherits the contributions of the failures. The situation is common in real life; but it need not be deliberately introduced into schools.

Pass questions continuously, and mark; or set brief paper tests to be dealt with promptly

It is in my judgment a far better plan to have no moving about, but to pass all questions continuously, marking the boy who answers right, and beginning each question where the last left off. In this way everybody gets the same number of chances, and is marked for what he does. The teacher can also give a higher mark for a harder question; and contributions to the truth, even if imperfect, can be rewarded proportionally. Questions can also be offered to the whole form to answer in writing, and all correct

answers marked. Again, as the boys are stationary, they can use desks, and so at any moment can take notes or write answers as the teacher may think advisable. The great advantage, however, is, not merely that the competition is so much more fairly conducted, but that it is so much less obtrusively in evidence. The business in hand has in every way much more the air of teaching; and the master can at any moment digress, expound, illustrate, narrate, without feeling that the boys low down are fretting at the injustice of not having a due chance to improve their position. And as to the liveliness of place-taking, the stupidest teacher hardly needs telling that he is not paid to keep boys awake, like a policeman, by 'moving on,' but by exerting himself to provide a more profitable sort of vivacity.

Another plan, which may be conveniently worked in with the stationary system, is to select before every lesson some dozen questions which may be answered very briefly, and which will serve to test whether the lesson has been learned properly, or at any rate to expose the rank idler. The answers to these are written down on a slip by everybody; after a few minutes the teacher reads out the correct answers, and the boys mark their own papers, or each boy may mark his neighbour's paper, say with a cross for 'right' and a dash for 'wrong.' The papers are collected, and the lesson proceeds. The whole thing need not take ten minutes; it encourages smartness and accuracy; it removes the common temptation to speculate on 'not being called up;' and it sets the master's hand free to use the bulk of the hour for real teaching, which may still be punctuated with a good many more questions, orally asked in the usual way.

In regard to marking for oral performance, and the correction and valuation of written exercises, experience suggests a few hints, all more or less of an obvious character. In the first place all written work should be returned promptly. I know of some forms where the teacher was always in arrear, sometimes as much as three or four weeks behind; and I have heard of exercises being never returned at all. It is needless to say that delay loses half the educational advantage; and to leave even a small chance that a boy's work will not be looked over is to give the strongest temptation to neglect. In marking written work, repetition, and oral translation, it is convenient to use a small maximum, say 20, or better still 10. For it is far easier with a small range to keep the standard true and steady; no man can really keep fifty or a hundred different degrees of merit

Small and large maxima

clearly distinct in his head. Moreover if he uses *the same* small maximum (say 10) regularly, he gets a distinct association attached to each of the figures from 0 to 10, which enables him to mark anything with confidence and despatch. Another common method of marking written work is to fix a higher maximum, say 40, 50, or 100, and to *subtract for errors*. This has the advantage of being mechanical, and (so to speak) self-acting; the only care required is to value the errors truly, and *always subtract the same amount* for mistakes of the same or equal heinousness. But I think a distinction is needful here. This method of marking is only satisfactory in the case of elementary exercises, where the work is either right or wrong, and no account is taken (or can be taken) of style. The danger is that the method may be continued too long, and so tend to ignore and discourage the elements of style. For example, all English essays and translations, all continuous prose in another language, and all verses beyond mere rearrangement—puzzles of given words, designed to teach metre, are best marked by impression. The moment boys can see that of two grammatical ways of saying a thing one is 'better,' the sense of style is nascent; and while accuracy will always need to be sternly required, the system of marking should never be allowed to dwarf or ignore the higher importance of style. Another danger which commonly besets a young teacher is to pitch the standard of work too high, and in marking to lump together under 0 a great variety of stages of demerit, while he is too chary of high marks for the more meritorious. He should recognise that he does not really know at first what his pupils can do, and that marks without that knowledge are given in the dark. The best general rule is to take as 0 a performance a very little below what the stupidest boy produces when he is not flagrantly negligent, and as maximum a merit a little above that which the better boys can ordinarily with effort reach. And this standard should be daily tested and corrected by experience.

A fair standard, and just application

Lastly, to leave these elementary but most important details, there is another principle in dealing with marks which I should strongly advocate, namely, that the boys should always be allowed to know their marks, where marks are given; and that any complaints should be carefully attended to. Nothing encourages mutual confidence so much as the feeling on the boy's part that the man is anxious to be fair; and, as a fact, a man may often be helped by the boy's criticism to correct an inadvertent injustice either of system or of detail. They are the people whom

the shoe pinches, and the wise cobbler attends to their grumblings.

But the most pressing and fundamental question for the novice is of course not seats, schoolrooms, marks, or other mechanical aids, but how to keep order in his form. Order is not everything; it is certainly not teaching; but it is clearly the first and indispensable condition of true efficiency. I have known a man who was a first-rate teacher in private, and who invariably produced real results in his form, but who never could keep order at all. But though he produced results, he still was not efficient, because he only taught those who had a turn for learning, and who were strong enough to learn under the difficulties of disorder. On the other hand, though an indispensable condition, order is not itself efficiency. I have known men who kept excellent order, but who were none the less inefficient; for they made the whole business so dreary, that the boys drew the false and fatal inference that learning was a distasteful thing. Both dangers are real, and common; and a man will best be able to keep order if he realises at once its necessity and its limits. It is of course true that some men from the first find no difficulties, and that some can never succeed at all. But by far the majority belong to neither class; they find difficulties, but they learn by degrees how to meet them more and more successfully. The first great necessity, it seems to me, is that a man should exert himself to keep both his *senses* and his *sympathy* active. More men fail from what is at bottom indolence than from any real incapacity. It saves a master trouble, up to a certain point, not to bother himself about slight disorder; and when the point is passed, as it certainly soon will be, one kind of man thinks to save trouble by allowing more serious disorder, and another by coming down too sharply and severely on the offenders. Both results are bad, and they both follow from the first laxity. Neither would have occurred if the man had been more on the alert. And, as I have said, both senses and sympathy should be awake. He must set himself to see and hear what is going on; the boys will be quick to discover that he does so, and little or no overt repression will be ordinarily required. But his sympathies must be active too, on every ground. If disorder threatens, he will himself be more quiet and fair and less irritable; his manner will be more genial; he will be quick to detect and remove the contributing causes,—the dullness, the weariness, the discomfort, lethargy—which often are more than half the source of inattention or tur-

Order. The master's senses and sympathy should be kept awake

bulence; he will soothe instead of exasperating the friction; and if all such preventives fail, and explicit repression becomes needful, he will be better able to judge the right moment, to discern the true culprit, and to admonish and correct adequately and temperately. Of course offences will come—especially on hot afternoons, or in the reaction after any school holiday or excitement. But the man with sympathy makes allowance for these things; and not only is less easily provoked, but forestalls, diverts, abates the irritation (which in his heart he shares); shows various resource, finds relief for business that has become wearisome or stagnant. The best teacher has to traverse deserts in his course as well as oases; and he shows his mettle, not like a mule driver by vociferously driving the reluctant, and goading the jaded, but like a good captain by cheerfully leading the way, giving new courage to the laggards, beguiling the waste of drudgery with every sort of diversion. To do this no doubt requires self-control, invention, and energy, where often they are difficult; but sympathy reminds one that they are less difficult to a man than to a boy, and that at any rate the boys are there because they cannot help it, while he has deliberately chosen his task; and that it is precisely to meet and solve those difficulties that he is appointed to his honourable service.

Disorder. Grapple with the 'disease'

The principle I am arguing for is the very simple one that in all cases of offences against form discipline, from mere inattention up to turbulence, though the symptoms of the disease may require to be dealt with, it is always the disease itself that should be grappled with. The really malignant worrying of a master is extremely rare; if it occurs, it is either organised by an exceptional *mauvais sujet*, encouraged to do so usually by finding a teacher who is dull, or irritating, or obtuse; or it is the climax of a permitted and progressive disorder, due to exceptional incompetence on the part of the teacher. The *mauvais sujet* wants suppressing at once; and if the case is serious, the best method is to eject the boy, with orders to return at the end of the hour, when the matter can be quietly gone into, without the dangerous experiment of a public trial of strength. The hour of the lesson is thus saved; and the culprit, who is usually playing to an audience, has to undergo the ordeal of a *tête-à-tête* investigation without his usual support. For the exceptionally incompetent master there is, I fear, no remedy but retirement. It is useless for him to set heavy punishments; they are a new grievance, they are *ex hypothesi* difficult to enforce, and

they call out new acts of war. Appeals to the higher courts are useless; the daily life has to be carried on between the master and the form; and if he cannot himself get the upper hand and keep it, no one can permanently get it for him. Moreover, the headmaster finds that it is just the energetic and high-spirited boys, who have done well in other forms, that are the leading criminals under the incompetent. But these are extreme cases, and, as I say, are rare. Ordinarily the offences are either inattention, prompting some to dreamy abstraction, others to the minor little irrelevances enumerated above, which are resorted to as pastimes; or else mild and inchoate forms of insubordination, arising from the desire to get amusement out of a dull lesson by tentative audacities. Both must be stopped, and rebukes and punishments may be needed; but the only permanently successful treatment is to make inattention difficult, and turn the desire for amusement into legitimate channels, by providing interest and liveliness in the lesson itself.

Geniality in teaching

I have spoken of 'amusement' and 'diversion' as desirable elements of a lesson; and it may be thought that the order, dignity, and decorum of the school-room would be thereby imperilled. The Commission Report of 1862 describes a school where tedium was beguiled by the boys flying young rooks across the room; and I know of a public schoolmaster who varied the proceedings by divesting himself of his coat to clear the table at a standing-jump. These are not the diversions I refer to. A lesson can be full of amusement without buffoonery; and order and decorum can be perfectly maintained without stiffness. And there should be no stiffness in a school lesson. The cap and gown is all very well in chapel, calling-over, or any public parade; a lesson is private, and the official signs may with advantage be both literally and metaphorically removed. The footing should be easy, sociable, with as much playfulness and friendliness of talk as is compatible with getting the business done. Often a man will find that his illustration, his relevant or irrelevant story, his allusion, his *obiter dictum*, even his jest, has proved a fertile seed, where his direct instruction may have been barren of result. Even a rebuke, for minor offences, is often better if given playfully; and satire, which is a dangerous and inexcusable abuse of power if it is bitter, may be a healthy corrective if genially and playfully used. And it is a mistake to suppose that boys will presume upon a master who thus contributes to their gaiety. They might not be able to analyse or define where the line should

be drawn; but they are quick enough to understand it, and to follow a good lead. With a stiff man, or a martinet, they are ready to take liberties where they dare; with a genial man who tries to make learning pleasant, if only he be not negligent, they would not take liberties if they could. Thus, where the martinet makes both discipline and learning odious, and the incompetent makes them contemptible, there is a third method—not without its difficulties, yet attainable in a measure by the ordinary man—which maintains a real but unobtrusive order, and gets the best results out of the material without waste or friction.

The ideal is to keep order with hardly a rebuke, and without punishment at all. In earthly schoolrooms this cannot be quite realised; and both rebuke and punishment may be occasionally necessary, and even at times in severe measure; but it can be much more nearly realised than many masters know. Constant punishment is the infallible mark of bad handling, as every headmaster is aware; and constant rebuke is nearly as objectionable. The former demoralises, and both weary and exasperate. It is also obvious that both lose their force by repetition. It is a safe inference, that if much of either is required, the man himself is at fault; he is expecting too much, or exaggerating offences, or is out of temper, or covering weakness with bluster; and in any case he is trying to cure ill with ill.

Discriminate between offences; and appeal but rarely to conscience

Much of what has been said applies also to the greater offences, unpunctuality, bad manners, disobedience, idleness, bullying, bad language, lying and cheating. Here too, of course, vigilance and promptitude are always required, to notice and deal with the acts; but sympathy also is required to divine or discover the cause, to judge discerningly, and to aim at the disease instead of the symptom. Here also the greatest possible difference is made by the footing on which teacher and pupils mutually stand, and the spirit which prevails. But there are some further distinctions to be drawn. Unpunctuality is a frailty, of which the boy should be helped to cure himself. Defect in manners is generally a mere misfortune, where he should be considerately shown a better way. Disobedience and idleness are school offences, varying from venial to serious; and though they should each carry a fixed appropriate penalty, like the law of the land, the master's danger will be a liability to overdo moral indignation, which should be, in my judgment, usually repressed. It is a great mistake to treat a childish piece of audacity or thoughtlessness as depravity, and to

appeal to conscience instead of common sense. If the appeal fails, the culprit is hardened; if it succeeds, the culprit may become morbid or a prig. The precocious conscience is a malformation. But every indirect effort should be used to get the boy to a better mind, if it were only in order that precious time, which he cannot afterwards recover, may not be thrown away. If the idleness is chronic, it is more serious; but anyhow it is hopeless to drive him out of it by penalties. The most they can do is to force him to reach the minimum of industry that will be accepted; the root of the evil is not touched. The teacher must lure him out of idleness by finding something that interests him, by gaining his confidence, by getting help from any influence to which he is open; and if all fails, he must be removed to a parallel form or another school, to give him the chance of a new start.

The place of 'moral indignation'

But whatever view be taken of these offences, at any rate they should be treated as fundamentally different from the more heinous wrongdoings that remain. It is vital that the boys should realise the deep distinction between what are breaches of school rules, and acts that are mean or cowardly or dishonourable. Here moral indignation is in place; though it is wiser to avoid any startling or theatrical denunciation of the culprit. What you want is to reach him, to convince him, to shame him, to make him feel; and a plain and quiet word which conveys your own strong feeling will be more effective than any declamation. And very often, if not always, it will be best to remonstrate in private. In form-lessons there is not much scope for the bully or the foul-mouthed; though the teacher who makes a point of seeing the boys out of school hours, and who passes time amongst them and keeps his eyes open, will sooner or later come across such things. But cases of dishonesty are pretty certain to turn up in the ordinary course of the school work. The forms of the crime are infinite; to pin up the repetition at the master's desk and read it off; to steal one another's answers to sums, whatever be the working; to prompt a friend when translating orally; to share scant knowledge in written examination, either by copying or whispered communication; to 'pave' the text, *i.e.* write the English down at the side; to get illegitimate help from friends, from senior boys, from prohibited books; and finally, when charged with those or any other offences, to lie about it. To consider each case separately would be tedious and certainly needless; but a few points may be worth noting. Where dishonest methods are rife, the master is condemned; for vigilance *can* keep them in check, and the result

of negligence is to put irresistible temptation before honest boys to become, in self-defence, dishonest. Again, the law must be clear and known; for boys are universally prone to regard what is not explicitly forbidden, and practically permitted, as morally permissible. It should be remembered, too, that the commonest cause of all forms of boyish dishonesty, and particularly of falsehood, is fear; and the teacher's most essential duty is to discover and remove these fears, and to protect and reassure the timid. Last and most important, whatever slowness the British boy may have in other directions, to a man who visibly seeks his regard and confidence he is quick to respond; and where the charms of abstract virtue have failed to allure him, often for loyalty's sake he will keep a straight course. Quite apart from the human interest thus offered to the teacher, a man must be dull indeed who does not court and cultivate this invaluable aid towards the performance of his difficult task. And though a boy of weak character, when he leaves a good teacher's hands, may again fall under the rule of the incompetent, and again be subject to his besetting temptation, at any rate it is an unmixed gain that he has passed several months, at a critical time of growth, in an atmosphere of clearer views and sounder practice.

I have spoken above of the desirability of dispensing with punishment, as much as may be, in the ordinary course of dealing with a form. But though that form is best managed where the sanctions of the law are seldom put in force, sanctions of course there must be in reserve; and it may be asked what are the best kinds of punishment, when it is required. Those in common use are flogging, caning, extra lessons, special written work, lines, repetition, or loss of marks or places—in a descending scale corresponding to the nature of the offence. Without elaborate discussion of the *pros* and *cons* in each case, for which this is not the time, a few general suggestions may be made. Flogging is a coarse form of punishment, suitable perhaps to a rude age; but now nearly obsolete except in a few old schools, and certainly better abolished. Caning should be in my judgment reserved for the last resort, and should be always private; the worst form of it is (what was or is in use in some places) teaching a class 'with a cane in the hand.' Apart from the fact that (as Homer says) 'Iron of itself draws a man on,' for the master thus to suggest that severe punishment is part of the ordinary course, is entirely bad, and fatal to the proper relations between a teacher and his form. Other acts of violence, such as blows or boxing of ears, should be

prohibited altogether. In no case, I hold, should severe punishment be given immediately; there should be no opening for anybody even to imagine that a man punishes because he is angry. That a boy should lose marks or places for neglect of work is obviously just; but punishment should be always (as far as may be) *in kind*, and unpunctuality, slovenliness, impertinence, or even inattention or disorderliness, should not be punished by loss of rewards given for work. Again, there should be no *collective* punishment, except in the rare case where every individual has been proved guilty of the same offence. An extra lesson for a whole form is usually in my experience unjust, and due to the master's ill temper or want of careful discrimination. If a *whole form*, and not merely the *particular boys* selected for trial in a given lesson, are proved ignorant of what they were set to learn, such a punishment may be just; but even then the failure is more likely to be due either to some general cause of distraction, for which allowance should be made, or to the work being too hard. On this last point a master should always be most careful, and very slow to decide against the boys; it is one of his most difficult tasks to judge this correctly, and one in which everybody, and particularly novices, will certainly make constant mistakes. In regard to the common punishment of extra written work, it is certainly right that a lesson plainly neglected should be done again on paper; but 'lines' for other offences should be confined within narrow limits at least. It is so temptingly easy for an angry or incompetent master to set such penalties, that a man should be slow to avail himself of them. In many schools it has been found an excellent plan that all such form punishments should be written on a special paper, which the boy can only get from another authority—housemaster, tutor, or headmaster. This plan at once reveals the weak places, *i.e.* the forms where punishment is excessive, and acts as a check upon them. Lastly, it goes without saying that all form penalties should be promptly exacted. The system which prevails in places of increasing penalties for non-delivery is generally bad; it leads to hopeless arrears and final insolvency. If a punishment is set and not done up to time, it is best to force the culprit, by imprisonment during his first hour of leisure, to clear it off.

I have been speaking, in the above remarks on punishment, chiefly (as will be seen) of the minor or school offences; and it is here that the question most commonly arises. With regard to the more serious moral offences the case demands a totally different

method, as has been sufficiently shown above. These do not come into the daily life of a form; they generally involve the intervention of other authorities; the difficulty here does not lie in the question of the mode of punishment, but rather in finding the best way of handling the evils themselves. And on that point the suggestions I have made will suffice.

My subject has been form management, and not teaching; but of course the two are intimately interwoven, and in my remarks on the former I have inevitably and deliberately touched many points of the latter. I should like in conclusion to say one thing more, however briefly, which belongs perhaps strictly to teaching, but affects rather fundamentally the handling of a class.

I have dwelt above on the need of variety, enlivenment, illustration, in conducting form lessons, regarded as expedients against inattention and disorder. They are of course much more than this; they are indispensable elements of all good teaching. But I would go further, and urge the young teacher to treat every lesson, above and beyond the matter in hand, as rife with opportunities for general instruction and suggestion. In an ordinary secondary school a form teacher will have languages, history, divinity, English—most or all of them—to teach; and for the master in these subjects, as Dryden said of Chaucer, there is 'God's plenty.' Without irrelevance he can sooner or later drop suggestive hints of almost anything that he is interested in; and it is well that he should recognise his chance, and the duty of using it. And it is quite possible to do this effectually without in any way shirking, scamping, or getting behindhand with the day's lesson. It is unfortunately true that the business-like teacher is often not stimulating, and *vice versa*. It is all the more needful for the novice to realise that he is bound to combine the two, and that to fail in either is to fall seriously short. To be business-like is, though not easy, the easier of the two for most men; and for these the other quality will require most conscious effort. A teacher should never forget that he is furnishing the boys for life; that the time is short and the opportunity precious; that a seed sown now will do more than a bushelful ten years hence; that the soils are various, and largely unknown, and that he must sow broadcast in faith and hope. History, nature, art, poetry, literature, archæology, folklore, tales of the great, inventions, exploits, exploration, great names, current events—any and every branch of human interest and activity will supply material; the wider his own interest and knowledge, the better for his pupils. Whatever he

Every lesson gives opportunities for 'general' suggestion

thinks, reads, or cares for, can sooner or later be shared; and he should feel that he is there to share it. The narrowing causes are many and powerful; and they are his difficulty. Feeble powers, uncultured homes, personal and petty interests, school gossip, athletics, the many trivialities of life, the scant leisure of a well-organised school—these things, necessary or harmless or regrettable, but all natural and none of them his fault, nevertheless contract the boy's horizon; and the teacher is there to widen it. It is this, rather than history, or science, or classics, that he is hired to impart to the young minds. And to do this, and not leave the other undone, is at once his problem and his privilege.

A. SIDGWICK.

INEFFECTIVENESS IN TEACHING

THE aim of class-teaching is to impart, with the minimum expenditure of effort, the greatest number of productive ideas.

The success of a lesson depends upon two factors—the selection of suitable matter and its proper presentation.

Whether the subject-matter is of the right kind is determined by one broad test: Does it interest the pupils? If it does so, then all the qualities attributed to 'suitable' matter follow. It is appropriate to the age and understanding of the scholars; it is arranged in natural order; it fits in with and is related to their present attainments; the new ideas can be rationally explained by reference to the knowledge which the pupils already possess; and the effort required to grasp what is novel is sufficiently great to give the pleasurable feeling that comes from intellectual activity and successful acquisition.

Interest is the criterion alike of matter and of method

The object of method is to enable this fusion of the new and the old to take place with ease and completeness. The worth of a method is also tested by the interest that it evokes; and this, again, is the measure of its conformity to the processes through which the mind of the learner must pass in acquiring knowledge.

Lack of intrinsic attractiveness in subject-matter must be supplied by added interest in the mode of treatment.

The instruments of method are description and explanation, illustration and interrogation, with their attendant devices for helping the mind to keep tenaciously what has been presented to it. And ineffectiveness in teaching (apart from that which is due to defective organisation and government) comes to mean the wrong or unskilful use of these means of reaching the minds of the scholars.

The teacher resorts to *description* when he has to help his scholars to form ideas of things which, for some good and sufficient reason, cannot be made clear by a direct appeal to the senses. He

leads his pupils to the complete conception of the new fact by making use of their previously acquired knowledge, real or verbal.

Description. Its use, aim, and effect

The power of graphic representation by words is one of the teacher's most valuable gifts. His scholars' vivid realisation of scenes, objects, and events beyond their 'sensible' experiences depends chiefly upon his skill in assisting them to modify and rearrange the ideas which they already possess.

In order that the resulting mental picture may be clear and striking so far as the scholars are concerned, it is essential that the teacher shall have a well-defined image in his own mind. This being absent, excursive and desultory talk is made to do duty for description.

How much the vividness of a description depends upon one's thorough knowledge and clear realisation of what is intended to be presented, the teacher may readily prove for himself. Let him describe to his class the scene of some holiday jaunt; and on another occasion give them also an account of the travelling experiences of another person. The personal element and its accompanying knowledge will have given an air of reality and definiteness to the first lesson that is generally wanting in the second.

But full knowledge has its dangers. The teacher must keep in mind the salient features of the picture. A fixed and clear outline is what is required to correct the possible misuse of superabundance of information. If the unimportant matters are treated too much in detail, one of two things generally follows—either the mental picture as a whole is blurred, or it is out of scale. There must be a sufficiency of detail to make the thing real to the children, but the description must be so managed that they perceive what is subordinate.

Descriptions not to be overburdened with particulars

It must be remembered, too, that the new impression cannot be clearer than the ideas of which it is compounded. If the elementary notions which are to be unified into a new whole are not fairly within the range of the pupil's experience no distinct or final idea can be reached. Teachers must not demand of description what is beyond its power to give. The verbal illustrations are of importance here. They must deal with matters known to the scholars, and must be set forth in language which can easily be followed. If an unfamiliar word is used, the context should be sufficient to explain it. There must be no need for the teacher to interrupt his description in order to make clear the meaning of his terms.

Digressions and undue haste are fruitful causes of ineffective description. Not only must the teacher choose his words carefully and deliver them clearly, but he must give the scholars time to piece together and to grasp the meaning of the elements of the new combination. Description has many pitfalls for the loquacious teacher. He forgets that there are many words that are quite familiar to the ears of the children, but the exact meaning of them has never been understood. He seizes upon the first word that comes to his lips, careless whether it be that which best conveys the idea or not; and children soon tire of attempting to follow the clumsy and constantly altered narrative.

The vividness of the impression is determined by the teacher's manner of delivery as much as by the matter of the description.

Ineffective description due often to faulty delivery

A dull or drawling utterance, an air of constraint, listlessness and indifference of manner, anything in short which shows the pupils that the teacher himself is not interested in his description and that he does not expect they will get much help from it, will effectually spoil a narrative, no matter how perfect its rhetorical form.

It is a common error to suppose that because a description has been given it has necessarily been apprehended. Rigorous questioning must be used, and the usual methods must be employed by the teacher to satisfy himself that his instruction has been followed.

Good narrative power is to be acquired by varied practice alone. The teacher will find his most appropriate material in the geography, history, natural history, and language lessons. The physical aspects of a country and the manners and customs of its inhabitants, the people of past time and the conditions under which they lived, natural phenomena, the homes and habits of animals, are all fit subjects for him to exercise his descriptive powers upon, because children can be referred to experiences which are thoroughly intelligible and individually interesting to them.

To be effective in description the teacher must have a pleasant delivery, ability to express himself in language that children can follow with ease, full knowledge of his subject and keen appreciation of what constitutes its chief characteristic, and tact in suppressing or in relegating the unimportant to its proper place.

Questioning: its place and importance as a teaching instrument

The ability to question skilfully is, next to 'governing' capacity, the most valuable of the teacher's gifts. Power to select and marshal facts, great narrative power, skill in exposition and illustration, all have to yield pride of place to this powerful instrument in teaching and training.

For the first condition of success in teaching is that personal communication between teacher and pupils be of the most thorough and intimate kind. It is by means of his questions that the teacher keeps in touch with his class. At different stages in a lesson the art of questioning demands the exercise of different kinds of mental ability on the part of the teacher. At one moment, successful questioning will depend upon his acquaintance with the nature of the minds with which he is dealing; at another, it will rest on his full knowledge of his subject; now, it will depend upon his power to think logically and to state clearly, and at another time on his ability to come down to the level of his scholars and on his knowledge of the capacity and attainments of each one of them. And it is not uncommon to find a teacher doing excellent work in one of these departments and failing in the others.

The teacher's opening questions and the replies to them should give him sure and certain knowledge of the extent and soundness of the scholars' information on the matter in hand. He then knows where it is best to begin, what to attack, and how much it will be wise to attempt. But 'introductions' often fail in doing this. The aim of many teachers seems to be to approach the subject by the most tortuous path, or, still worse, to tempt the scholar to use a term upon which they can seize and announce the lesson. These, lengthy and devious introductions do nothing to excite children's interest and curiosity: indeed, they more often kill all activity at the outset. For it is at this stage of the lesson that questions of the conundrum type most abound. The scholars become bewildered and grow disheartened at the continued rejection of their answers, and instead of the exercise being stimulating to them and enlightening to the teacher, it falls flat and is unprofitable.

As a lesson develops beyond the introductory stage the purpose of the questioning changes. Its object now becomes disciplinal or educative. By its means the scholars are taught to help themselves, to think with a distinct purpose in view. They are aided and directed in the formation of new ideas; they are led to make observations and inferences for themselves; their difficulties are revealed and are overcome by being broken up into simpler problems.

The chief faults in questioning

The chief faults in questioning here arise (1) from over-elaboration of method, (2) from a mistaken notion of what the interrogative method can accomplish, (3) from the teacher not being clear as to what he wishes to arrive at.

In the first instance, the teacher wastes time in questioning on very obvious matters. He arranges his questions so that very little mental effort is required to answer them. The steps taken are too short, and even possible difficulties in verbal expression are smoothed over. The lesson marches but slowly; the pupils tire of the elementary exercises proposed to them; they feel that their stock of information is not being increased; futile questions bring foolish and random answers, and soon the teacher is confronted with difficulties arising from inattention, the children being driven to find some expedient to interest themselves.

In the second case, the teacher is unreasonable in his exactions, and shows ignorance of the sort of information which the pupils are likely to possess or which they can reach by using the knowledge they already have. In trying to avoid telling he encourages guessing. He assumes that questioning is the exclusive method of teaching; he forgets that exposition and illustration have their parts to play, that many things must be told outright. He wastes time by attempting to elicit by obscure processes what should be communicated directly.

In the third case, we get questions fenced round with qualifications and afterthoughts which prevent the scholars from understanding what is really expected of them. Or the questions are withdrawn as soon as uttered, and some petty and unnecessary alteration is made in their form or matter. There is an absence of sequence and connectedness in them, and they do not focus effort on one point at a time. The teacher is no clear guide to his class, and the pupils are quick to recognise the fact.

At convenient points, at the end of each of the natural divisions of a lesson, the teaching is interrupted and the scholars are tested. The teacher discovers how much of the new matter has been grasped and what inaccurate notions have been formed. He corrects any defects, and is careful, at this point, to make good the connexion between the several parts of his lesson. The customary fault is to omit these revision exercises altogether. More often, the best places for the revisions have not been predetermined, nor has a suitable line of questioning been settled. Really effective and searching revisions are seldom heard. Even well-disciplined scholars are not always made to respond readily to the teacher's effort. Probably their interest is less, the matter dealt with being no longer novel. The unprepared or easy-going teacher, after putting a few disconnected questions with meagre results, hastens on to the next section of his lesson, hoping to recover his grip of

the class. But the teacher must not assume that the lesson has been received because it has been delivered. He must insist on its reproduction by the scholars; and to this end his questioning must be rapid, lively, and sequential. The teacher who has thoroughly mastered the meaning and bearing of what he purposes to teach is not likely to permit any of his pupils to be passive when revision time comes. He remembers that, roughly speaking, he has three kinds of scholars in his class, the quick and thoughtful, those of average parts, and the idle and dull. The teacher manages his questioning so that all are kept on the alert. The bright and intelligent have had the questions of greatest difficulty while the lesson was being developed; the average scholars have had the simpler ones; the less able and the idly inclined get most of those in the revision exercises.

Sectional revisions are customarily unsatisfactory; the final recapitulation of the whole lesson is yet more often mismanaged.

Recapitulation

When it is not altogether omitted—which is its common fate—it is often superficial and imperfect. The teacher has no definite notion of what it should effect so far as his pupils are concerned, or what he himself ought to get from the exercise. A recapitulation differs from the revisions previously described in that it covers the *whole* ground and yet leaves some matters untouched that were questioned on in the partial reviews. It deals with more points than are contained in the blackboard summary, even where that has been very full and complete. Yet the blackboard abstract is the basis of the recapitulation. The aim should be to lead scholars to see the facts of the lesson in their true perspective, to help them to separate the illustration from the principle illustrated, to connect the divisions of the lesson, to fix the important facts that have been taught, and to leave the pupils with the feeling that the subject has been properly finished and rounded off, and that they understand it. In revisions, the questions should review the matter in the sequence in which it has been presented; in recapitulation, which is more strictly a test, that order may sometimes be changed with advantage.

The line of questioning should be determined beforehand. It is not desirable, even in the case of beginners, to prepare the actual questions to be propounded. Nothing is more likely to deaden the effect of the exercise. A question should naturally grow out of the answers previously given. But what is needed is that the teacher shall have clearly settled in his own mind what is to be attacked.

There should be no restatement by the teacher, no interpolated explanations, no new matter introduced. All helps to the memory, such as the blackboard summary, pictures, even apparatus that has been in use, should be removed out of sight. The exercise is to be one of reproduction. Question must follow question rapidly. In case of an inaccurate answer being given, the teacher must quickly determine whether it is one that he will have to correct or whether it can be left to a scholar to put right. Those pupils who showed weakness in the revisions, must receive most attention, and any who made gross mistakes should have the same questions addressed to them in the recapitulation.

As to their form and matter, good questions show the following characteristics :—they are quite clear and unambiguous in meaning, admitting of only one answer; they are set forth in terms which the pupils understand, and contain no more words than are absolutely required for their expression; they are not beyond either the ability or the present knowledge of the scholars, yet require reasonable effort to answer them; they are not elliptical in form, nor alternative; neither capable of being answered by single disconnected words, nor yet too wide or complex; they do not, *as a rule*, admit of a mere affirmative or negative answer; they are wholly in the interrogative form; they follow in proper sequence, each question being naturally connected both with the answer just received and with the previous questions; they cover the whole subject under treatment, presenting the different parts of it.

Injudicious treatment of answers

The degree of success which attends the questioning depends as much upon the manner in which the exercise is conducted as upon the form and wording of the questions. Each pupil must feel that he is liable to be called upon to answer at any moment. But if the teacher be too exacting, or if he correct mistakes in a sour and peevish way, the scholars are soon silenced. Approbation is not to be withheld; yet indiscriminate praise is likely to give them a false idea of the value of the work they are doing. The frequent occurrence of 'Very good,' 'That's right,' and such commendations, not only breaks the continuity of the questioning, but after a time ceases to have any encouraging effect on the children.

The bustling teacher, though generally successful in putting children on good terms with their work, often makes grave mistakes in his questioning. In his haste, he puts questions that are not clear in meaning; these have to be withdrawn and recast; or

he puts questions that are too difficult; these he has to explain, and often does so at such length that the original question is lost sight of altogether. He seldom allows sufficient time for thought; he is injudicious in the help he gives to those in difficulty. He repeats his question again and again in his desire to get his pupils to answer briskly, and as a rule eagerly accepts any answer that is offered. In the end, the attention of his class flags, and throughout there has been more show than work.

Avoid haste, tediousness, and carelessness

The spiritless and slow-thinking teacher makes a long halt between putting his question and taking the answer; his scholars have time to think of other things, and their attention is lost. He beats about the bush and keeps to a point long after the pupils have lost all interest in it. He interrupts the exercise to give orders on trivial matters of class discipline. He generally favours collecting opinions of many scholars on one question. All the exercise is tedious.

The careless teacher has a low standard of proficiency. He allows his class to remain in a state of stagnation. The stolid looks and dull eyes teach him nothing. As long as a scholar sits still and gives no positive trouble, he is severely let alone. Those disinclined to work are left unchallenged; or if, by chance, one of them is asked a question and no answer is forthcoming, the teacher does not return to him and compel an answer.

That oral questioning restricts thought to one thing at a time is at once a merit and a defect. Whatever sequence and unity may be in the exercise are due to the teacher, and it is exceedingly difficult to make sure that the pupils have mastered the lesson as a whole. The knowledge has been freshly given; the questions are, unavoidably, 'prompters;' the answers received are brief; the class may be large. The result is that the teacher can get but a general impression. A class may show very fair acquaintance with a subject when questioned collectively and orally, and yet fail egregiously in a written examination covering the same ground. Here the questions are necessarily of a more general nature; the pupil is required to express himself at some length; perhaps, he has to show how far he remembers and understands matter that was given him some weeks or months before. Courses of 'review' lessons at regular intervals combined with practice in written examination and long oral statement are the best means of preventing knowledge, that was perhaps laboriously acquired, from being forgotten, as well as

Inevitable defect of all oral questioning

giving scholars much needed exercise in continuous and coherent expression.

Unless questions increase the pupils' powers of expressing their thoughts intelligently and at some length, they fail in one of their purposes and lose much of their usefulness. To answer even an easy question necessitates attention on the part of the scholars, while to follow a series of questions gives them some amount of training in logical thinking and helps to form the valuable habit of concentration. It is quite as important for the teacher to take heed of the style in which his scholars frame their answers as to attend to the form of his own questions. In every case, he must refuse to accept badly worded replies; and the correction of the error should be unmistakable. To permit a pupil to hint at a reply, to jerk out a word and leave the rest of the answer to be imagined, is an inexcusable practice. And in the lowest forms it must be a hard and fast rule that every answer must be a complete sentence. It is objected that to insist on this takes up much time and makes the exercise formal and tedious. But experience shows that there is no safe middle course. The teacher cannot put himself in the hands of children who have not yet the capacity of judging when a full statement is necessary, and when a phrase or something less complete can be accepted. He has to remember that his pupil's clearness of expression is a measure of the success of his teaching. Frequently it is not until the child attempts to put his thought into a form which others can follow that it becomes evident to him how incomplete his knowledge is. If his information is accurate, having to determine for himself how to state it will cause him to remember it better. To find the right words, to put them in right order, and to utter them distinctly, is a valuable exercise in itself. But other advantages follow from the practice. Do what a teacher may, there are sure to be cases of inattention in every lesson. The pupil who has missed the question can get no good from listening to a fragmentary answer. But let him hear a complete sentence and he may learn something. Indistinctness in answering, too, is rarely met with where scholars are trained to give answers that are complete in form.

Answers should be full

Indistinctness is often to be traced to a teacher's habit of repeating, with or without comments, every answer received. He weakly accepts any response that his scholars choose to offer, and puts it into proper shape for them. They soon come to feel that the way in which they word their replies is looked upon as a matter of no consequence, and slackness

Indistinct and simultaneous answering

ensues. It is clearly necessary that every answer should be heard by all the class, and perhaps, in the first instance, it is less troublesome to the teacher to repeat a muttered answer than to cause the answerer to speak plainly. But he must not be content with less than the best that his scholars can give; and if he desires to train them in carefulness, he must encourage them to think that it is worth while to take pains to state properly and distinctly what they know.

The cases in which simultaneous answering can be used with effect are so few and the dangers of the method are so many and great, that it is wisest not to employ it at all after children have passed beyond the earliest stage of training. All the scholars in a class may successfully reach an answer to a question, but there will be great diversity in the ways in which they express their thought. To frame a query so that one expression alone will fit it, generally means that the worst form of elliptical question must be used. Then, the effort required to be made by the pupils is so slight and the answer comes so readily that the teacher is led astray. He feels that he is getting over the ground at a famous rate and quite misjudges the amount of knowledge that his scholars are acquiring. But it is on account of its bad moral effects that the gravest objection to simultaneous answering must be taken. It tends to destroy all independence in the pupil by taking away the feeling of individual responsibility. He is taught to rely on others. He is tempted to indolence by the knowledge that his deficiencies will not stand out by themselves. It is almost impossible for the teacher to detect all those who do not answer; and if one be noticed and blamed, he feels sure that he is not the only offender, and thinks he is unjustly treated by being singled out.

Illustration

In its most comprehensive sense the term *illustration* denotes all devices used by the teacher to make ideas clear to the minds of his scholars. Illustration of all kinds depends for its effectiveness upon the way in which the familiar and easy is connected with and used to explain the new and obscure, whether this be an object, an idea, or a general principle. In this place, attention is restricted to those illustrations which, being of a more or less concrete character, appeal to the senses.

The best explanation of an object is to be gained by the sight and study of the thing itself; and the next best, though *longo intervallo*, from a correct and unadorned picture of it. The pictorial illustrations which are most useful are those drawn by the teacher himself for the purpose in hand; and of those so

drawn the most effective are developed, piece by piece, at the blackboard as the lesson proceeds. Each line can be made the subject of a question if need be, and the attitude of expectant attention is maintained throughout the exercise. Maps and vertical sections of countries and districts, pictures of scenes and peoples, sketches of historical personages, of animals and plants and special parts of them, diagrams of machines used in industries, all these are valuable in their respective subjects, and for teaching purposes are to be preferred to purchased prints. By judicious omissions, the teacher can make sure that the attention of the scholars is not drawn away to matters of trifling importance, and he can always make his sketches on a sufficiently large scale to be serviceable to all. In some cases, colouring presents a difficulty, but this is chiefly found in natural history and botanical lessons; and even here, the general structure of the animal or plant is more to be depended upon for purposes of identification than the often misleading colouring.

Cautions to be observed in preparing and using pictures and diagrams

The following points are to be remembered in connexion with pictorial illustrations. (1) They are intended for *class* teaching, and from them scholars are to teach themselves. Therefore, they must be large and their lines bold. (2) Bad illustrations—those which are inaccurate or drawn in a coarse and slovenly style—are worse than useless. They have a bad effect upon the pupils' perception of form. It is inconsistent in the teacher to talk about 'leaving something to the imagination of the scholars;' for his plain intention in presenting the picture at all is to appeal to their powers of observation. Sketches must be accurate. Yet they must not be over-elaborate, for, to insert many details is to put difficulties in the way of securing clear-cut impressions. (3) It is as possible, and as disastrous, to burden a lesson with pictorial illustrations as with subject-matter. Therefore their number must be carefully considered. (4) The sketches must be made to suit the matter, not the matter chosen because certain illustrations are available.

The illustrations should demand the concentrated attention of the scholar. They should train him to investigate carefully and to express his ideas clearly. It is here that the teacher so often fails to use his pictures to the best advantage. He regards the sketch as something which itself requires explanation. If it does, it is faulty. A good illustration is suggestive, and carries its meaning on its face. Here then is the opportunity to require scholars to state what they see, and by means of direct questions to ascertain

that the essentials are not overlooked. The vague question, 'What do you notice?' is responsible for much haziness and confusion of ideas. As well as making the scholars arbiters of the order in which the facts are taken up and dealt with, this question leads an answerer, after his one attempt, to put forth no further effort and even to give no attention to the answers of his comrades. The questions must be definite and require pointed and methodical observation of the various parts of the illustration. The teacher's skill in using his sketches may be gauged by the number and orderliness of the statements made by his pupils.

If pictorial illustrations are too numerous, they are very likely to be used by the wrong persons in the wrong way and at the wrong time. The teacher feels that he has much to show and but little time at his disposal. So he is led to describe them instead of exercising his pupils' powers of observation and expression. A particularly interesting sketch tempts him to make lengthy remarks, and he tries to make up time by giving scant measure to the rest. The pictures then follow one another so rapidly that their meaning is not clear to the scholars. And at the close of the lesson the children's answers reveal that much has been misunderstood, and that many important facts have been left out. The worst fault of all is to exhibit the pictures in a pile at the close of the lesson. If there has been no need to show them until that time, they are not required at all; for adequate notions have already been gained by the children from the teaching. If the pictures are necessary, then time has been misspent; for the teacher has been endeavouring to give ideas that cannot be realised from words alone.

It is a mistake to have several illustrations on the same sheet. As a rule they are useless, at any rate for class purposes, owing to their diminutiveness and indistinctness. If all are exposed to view at once it is difficult to prevent the attention of the class from wandering, and the little good that may be got from them is lost. But if clearness can be secured, as it may if the drawings are of a very simple character, the teacher may make use of paper screens pinned over all illustrations but the one that he wishes to be noted.

It is not unusual to find pictorial illustrations even on a large scale wanting in usefulness. Sometimes they are faint-lined; sometimes their background is at fault. Pictures should be tested before being taken to the class. The draughtsman himself is not the best inspector, for he will often imagine that he sees what he knows to be there. Wherever the slightest indistinctness is observed, steps must be taken to correct it.

Sometimes illustrations of the wrong sort are put before a class. A common case is the use of sectional drawings with small boys. The power to read a diagram of this kind is quite wanting in young children, and many older scholars have considerable difficulty unless the thing so depicted is, as a whole, familiar to them. The illustration fails in an essential feature; instead of throwing light on what is obscure, it is itself unintelligible and needs much explanation from the teacher.

If several pictures are to be shown, they should be arranged in the order in which they are to be used. To have to search for a sketch may mean that the psychological moment is lost.

Drawings must be so placed before the class that they can be seen distinctly by all the pupils. To hold them up is the worst plan both for teacher and scholars. The former is hindered from using his hands in directing attention to the parts of the picture described. He has to peep over the top or round the sides of the drawing; and in so doing, either tilts or turns the paper so that some scholars cannot see. It is best to pin the drawing on a special blackboard conveniently placed. Whether each sketch is allowed to remain in view until the end of the lesson, or whether it is removed as soon as it has served its purpose, will depend upon the subject. The drawings often fairly represent the main facts that have been dealt with in the lesson, and so make a useful commentary on it and help scholars in connecting its parts. But in all cases they must be taken down before the final testing questions are put, or the teacher cannot tell how far the answers are prompted by the sight of his sketches.

The preparation of pictorial illustrations means the expenditure of considerable time and thought on the part of the teacher. The sketches are used for a few brief moments in the lesson, and then are often thrown aside. The best of them should be hung round the walls of the class-room and there remain until the next lesson in the same subject. Steps should be taken in every school for their preservation. A large and strong portfolio should be provided, and, as additions are made, the contents should be catalogued. Pictures thus preserved will be found useful in subjects and classes for which they were not originally designed, and a large stock will soon accumulate.

In some cases the most suggestive drawing may be copied by the scholars. Appended to their written notes, it will serve as an additional record of the lesson. A more careful sketch may be reproduced as a part of the home-work, or a 'finished' copy may be made in the next drawing lesson in school.

The optical lantern may be used with great effect in illustrating lessons, especially in history, geography, and science. A big disc and illustrations on a large scale are unnecessary for class purposes. The back of a wall-map or other large school diagram makes an excellent screen. The difficulty of maintaining order because the teacher cannot see his class is one of the objections made to lantern teaching. But it is quite possible to use the lantern in a room which is only half dark. All that is required is to prevent *strong* light from falling on the screen. The real danger lies in the temptation to select matter because the teacher has the slides to illustrate it, instead of choosing that which is the best for the pupils to know. As a rule, too many slides are shown, and they often deal with matters but remotely connected with the subject. No dominant idea runs through the lesson, which soon becomes gossipy and diffuse, and the educational result may be likened to that left in the mind of a scholar who idly turns over the leaves of a book.

Object illustrations and their superior value

Useful as pictures and diagrams are in stimulating interest and lending impressiveness to the teaching, object illustrations give still more valuable results. Knowledge conveyed verbally needs much repetition or it is soon forgotten. Information gained by setting out from the concrete makes a deeper impression and is generally more easily understood. Every school should possess a collection of objects for use not only in the elementary 'observation' lessons of the junior pupils, but also in other branches of school work; in arithmetic, geography, history, physical science, and even in the language lessons.

In managing his object illustrations the teacher is brought face to face with several practical difficulties. His main purpose here is to quicken and cultivate the perceptive powers of his pupils. But his arrangements are often calculated to defeat the end in view. 'Specimens' are provided, but they are used exclusively by the teacher. The children are not allowed to examine them closely. Sometimes they are even called upon to *see* qualities in the object that can be perceived only by handling it. Often the object is too small to be seen clearly when shown from the front of the class. Yet in such cases it happens that a sufficient supply could have been obtained without trouble and a specimen given to each pupil, who would then be in the best position for successful work. With the object before him he readily grasps the teacher's questions as they lead him to discover all that his senses can tell him about the

thing, and any supplementary information which the teacher thinks it expedient to give is quickly assimilated. If a specimen has to be merely passed round the class, only superficial examination is possible and that at a considerable expenditure of time if the class is large. Some teachers see this and fall into a worse fault. They promise that the pupils shall see the object at the end of the lesson, an engagement which, if not forgotten altogether, is rarely carried out with all members of the class.

Imperfect as the observation of the scholars has been in the case given, it has the added defect of not being first-hand observation. To prevent aimless looking, the teacher describes what the pupils will see before he passes the object round, and thus their perceptive powers are used in the least useful way.

Sometimes the teacher, thinking to prevent waste of time, attempts to question while the specimen is being circulated, a practice that invariably ends in confusion and is distinctly unfair to the children who have not yet had the opportunity of examining the object.

In observation lessons, disciplinary difficulties readily become pronounced, and the activity of the pupils is diverted into wrong channels unless great care is taken. Specimens must be distributed in an orderly fashion; they must be used only at the word of command and in the way that the teacher orders; they must be put aside, if possible out of sight, when they have done their work; all temptation to play with them must be removed.

Many of the faults noted in 'experimental' lessons arise from the teacher's misconception of the distinctive educational advantages which follow teaching through 'the concrete.' Physical studies are intended to make pupils acquainted with the facts and processes of nature; to teach them to *observe* things and how they behave under experiment; to cultivate in them the habit of tracking out the 'how' and the 'why' of everything that comes under their notice; to lead them to infer what is probable from a knowledge of what is proved to be true; and to develop in them the power to use language by requiring in all cases a clear and accurate statement of what is seen, done, or inferred.

Illustrations in experimental science lessons

One of the most common mistakes is to make the general truth the starting point and not the goal of the lesson. The teacher enunciates the fact and proceeds to demonstrate it by means of his experiments. The defect is just as common in the grammar lesson, which, of course, is capable of being made experimental,

and produces its best effect by experiment. The truth was not often reached deductively by the discoverer. The distinctive and most fruitful feature of modern method is the attempt to make acquisition of knowledge follow the course of historical discovery.

When the method of discovery is followed, it is often noted that an insufficient number of instances are taken to warrant the scholar in making the general statement. He is distinctly encouraged to jump to conclusions. In other cases, the inductive process is not completely carried out. The pupil is not required to apply the hypothesis to new instances, and thus to verify it. At some stage or other, the unskilful teacher is sure to step in with his authoritative pronouncement and the scholar fails to reap the full intellectual benefit.

Although the teacher must be prepared in case of need to illustrate the truth in several ways, he must avoid giving more instances than are required to make the point clear. Superfluous experiments waste time, and tend to make the pupils lose sight of the main fact that the truth illustrates.

The teacher who describes an experiment in detail, tells what will be observed, and what is to be inferred, and then performs the experiment, misuses his opportunities. His scholars are merely asked to attest his statement. Such procedure is an exercise neither in first-hand observation nor in original expression.

Children must take an active share in the class experiments. To assist the teacher is a privilege that cannot be enjoyed by more than a few pupils in any lesson; but wherever the lesson is not followed by laboratory practice, something should be sacrificed to this end.

Some of the impediments which the inexperienced teacher puts in the way of successful teaching arise from disregard of the physical conditions under which his pupils work. There are certain external arrangements which are wholly in his hands as class teacher and which are not affected by the general rules for the government and discipline of the school nor dependent upon such circumstances as the structure, ventilation, lighting, and furniture of his room.

Ineffectiveness due to disregard of physical conditions. Position of teacher; arrangement of class

Failure to secure steady application and continuous effort during a lesson is often to be attributed to neglect of some seemingly trifling precautions. For effectual control, the teacher must stand in a position from which he can command every scholar. It is a common practice to put the pupils who require

most attention in the front seats, and yet to find the teacher standing so close to the desks that these scholars are quite overlooked. They are neither made to take a part in developing the lesson nor do they have a fair proportion of the testing questions addressed to them.

For the purposes of oral lessons, some teachers form their scholars into a compact body, crowding them together in and between the desks and in the gangways; some are sitting, some are standing on floor and benches. This absence of outward orderliness of itself affects the class prejudicially. The even course of the lesson is soon interrupted, and the pupils' attention distracted by frequent disciplinary directions that would not have been needed had the children been distributed equally over the space at command. On the other hand, a class must not be spread over so wide an area that the teacher's voice is needlessly tried and the difficulties of supervision unnecessarily increased.

Scholars ought not to be allowed to sit for the whole of a school session. Long continuance in one posture is good for neither health nor work. The time-table should arrange for the necessary changes, and in extreme cases even for a change of rooms.

The lolling and slouching attitudes into which children so readily fall are both cause and indication of mental indolence. In some lessons, writing and reading exercises for example, the posture assumed by the pupil becomes a question of the first moment, not only from a hygienic point of view but also for successful work. Lazy, loutish, and physically undesirable postures are most likely to obtain in the higher classes of the school, and are there most difficult to deal with. But the trouble which their correction gives the teacher is amply repaid by the resulting intellectual alertness.

In no particular is the difference between teachers more conspicuously shown than in the use they make of the blackboard.

Blackboard summaries

The dull, slow-witted, or unprepared teacher has recourse to it to give himself time to think of something to say; and in place of the compact and suggestive epitome which should appear, there is seen a lengthy and confused statement which absolutely hinders the class from getting a broad view of the lesson. The verbose or rapid teacher either forgets to use his blackboard at all, or hastily dashes down, at inopportune moments, fragmentary notes that represent neither the facts of the lesson nor the order of the development of those facts. The truth is that the 'blackboard abstract' requires very careful thought. Beginners should be made to regard it as an integral

part of their 'formal' notes of preparation, and after the lesson has been given they should be made to compare it with what actually appears on the blackboard.

Of what facts the summary is to consist and how they are to be arranged to the best advantage are matters which experience alone will teach. We must bear in mind that the blackboard summaries are appeals to the *visual* memory. Orderly and graphic arrangement, variation in the size of the writing to mark the difference in importance of the facts, printing the 'key' fact, underlining, indenting, and in some cases the use of coloured chalks, are among the mechanical devices for securing a helpful summary, one that will strike the eye and compel attention.

Whether the blackboard summary shall be constructed step by step, at convenient points during the development of the lesson, or whether the notes shall be written up in answer to the teacher's revision questions at the end of each section, depends entirely upon the subject with which the lesson deals. But in no case may the summarising be left until the final recapitulation without the surrender of one of the most powerful means of giving definiteness and reality to the teaching. Maps which grow in completeness as the lesson advances, pictures and diagrams sketched on the blackboard before the eyes of the scholars, these have a far greater effect in stimulating the attention and exciting the interest than the more finished illustrations prepared beforehand. A similar effect is produced on the class when the verbal abstract is compiled at suitable intervals, especially if the scholars are led to suggest the statements while the teacher makes it his business to enforce their suggestiveness by a striking arrangement of them.

Rules for framing the summary

Some safe rules to follow are: (1) to write up all unfamiliar words as soon as they are used (if need be, giving a separate space on the blackboard for the purpose, so that the regular setting-forth of the summary may not be interfered with); (2) to set down every general statement, such as a definition, inference, or law, as soon as it has been reached and formulated by the class; (3) to let all that is written or sketched in illustration remain within sight during the lesson, and at its close (4) to use it as an effective instrument of revision; that is, make any contracted statement or suggestive word the subject of a question. Even then the summary has not served its full purpose. It should be entered by the scholars in their note-books, and some days after be used as the subject of a composition exercise at home or at school.

No summary is to be considered satisfactory unless the scholars have taken an active share in building it up, and by its help have acquired a clear notion of the relation of the parts of the lesson to one another, thus realising the continuity and wholeness of the exercise. In the case of the pertinacious and thorough teacher, his blackboard abstract, settled beforehand, serves to mark the irreducible minimum of knowledge that he will accept from his weakest pupil at the close of the lesson.

G. E. BUCKLE.

SPECIALISATION

The origin of specialisation

DURING the last fifty years a gradual but far-reaching change has come over the system of education in our public schools. The monopoly of Latin and Greek has been very rightly challenged. History, modern languages, mathematics, and various forms of physical science have been introduced into the curriculum; and portions of the public have been heard to declare that it is disgraceful that half a dozen other subjects should not be taught as well. At one time there seemed to be some danger that the schools, yielding to outside pressure, would teach a smattering of many subjects and nothing seriously. But just then the creation of 'modern sides' indicated that the tide of opinion was changing its direction. The modern side was, in the first instance, the practical expression of a belief that certain of the old-fashioned subjects—Greek, at least—are not indispensable to the education of a gentleman, and that certain others, such as German and chemistry, are more useful than these in after life. But the movement did not stop there. The popular mind, which is so fond of speculating about education, when once familiarised with the idea that the old hard and fast rule of teaching Greek and Latin to every boy was a mistake, proceeded to infer that all subjects of instruction were very much on a level. The next step was to conclude that it does not matter educationally what subjects a boy learns, provided he works hard at them, and that consequently those subjects should be chosen which will be 'useful' in ordinary life. The logical conclusion from this last premise has been drawn by those schools which let a boy who has a taste for mathematics or science drop all other subjects at fourteen or fifteen, in order to devote himself to that which is to be his work in the future.

Arguments in its defence

Without stopping to examine these opinions, let us note the concrete forms in which the deductions made from them present themselves to the schoolmaster.

(*a*) 'Education is training for the work of life,' says the father. In the trade or profession for which my son is destined, there is no call for Greek or conic sections. Let him learn something useful. What does it matter whether he learns Latin or Spanish, Euclid or Shorthand? Work is work, and the one kind produces serviceable knowledge, the other only idle accomplishments.

(*b*) 'Education is training for the work of life,' says the amateur 'educationist.' Since a man does his best work in the world by devoting himself to that which he can do best, why not extend the same principle to school? Will not the boy develop best who begins as early as possible to exercise his best faculties? Why must he spend a great part of his time between fourteen and eighteen in the ungrateful labour of writing Latin prose ill, or learning history which he will soon forget?

(*c*) 'Education is training for academic distinction,' say the fellows of Oxford and Cambridge colleges. The more a boy knows at eighteen about his special subject, the more likely he is to gain a first class at two-and-twenty. Since the credit of our colleges rests largely upon the number of first classes obtained by its members, we are willing to give our scholarships to boys who have the requisite knowledge of one subject, no matter how little they know of other things.

With these external cries which assail the schoolmaster's ear, there chimes in the voice of self-interest, which tells him that his school will gain reputation by winning scholarships, and popularity by adapting itself to the wishes of the British public. Here is cause for him to reflect seriously. If the old educational tradition was a mistake, which said 'teach only one thing,' in which of the modern popular cries is wisdom to be found—that which says 'teach everything, no matter how,' or that which says 'teach anything, no matter what'?

Education is undoubtedly a training for the work of life. But it is the training of a man, and of a whole man, not a mere drill or special faculties for a limited purpose. Putting aside the training of moral, social, and physical powers, which is outside the scope of this chapter, we claim that no instruction is a real preparation for life which develops only two or three mental faculties and stunts the rest by neglect. This is not the place for psychological analysis; but it will be instructive, using the terms commonly current, to observe some of the most necessary forms of mental activity, and inquire how they are related to different school studies. Let us limit ourselves to

The minimum range of a liberal education

memory, taste, imagination, observation, expression, and reasoning —remembering that reasoning may be either abstract, concrete, or social.

Memory is trained by most studies, but best by languages and history.

Taste is trained by the more advanced study of languages, and still better by English literature.

Imagination is trained by all higher language teaching, but especially by Greek and Latin poetry.

Observation.—Science work in the laboratory is best; but some training is to be got from the earlier stages of Latin and Greek.

Expression.—For this, there is nothing so good as Greek and Latin composition. English composition comes next.

Abstract reasoning.—Here mathematics stands almost alone.

Concrete reasoning, or reasoning about objects before one.—For this, science comes first, then geometry.

Social reasoning, or reasoning about men and institutions.—The Greek and Roman historians and orators give perhaps the best training. Next to them comes the study of history in general; but boys learn more from ancient than from modern history, because the issues and the characters are simpler.

We may arrange these results in another way, so as to show the faculties which are chiefly affected by each of the subjects.

Greek and Latin (elementary).—Memory, logical expression, concrete reasoning.

Greek and Latin (higher).—Taste, imagination, expression, social reasoning.

Modern languages offer the same kind of training as Greek and Latin, but in a vastly inferior degree.

English literature.—Memory, taste, imagination, expression, social reasoning.

History.—Memory, imagination, social reasoning.

Mathematics.—Abstract and concrete reasoning.

Physical science (if combined with laboratory work).—Observation, concrete reasoning.

If this analysis be correct, we must conclude that the narrowest education which can claim to be at all complete includes Latin, one modern language, some history, some English literature, mathematics, and one science. Each of these studies, besides training faculty, brings the mind into relation with one or more definite aspects of human life. In that sense they may all be described as 'useful,' since the prime necessity to every man, no matter what

his occupation, is to understand human nature. I believe it may be said without exaggeration that of the countless would-be musicians, painters, doctors, mathematicians, and lawyers who fail in life, a very large proportion owe their failure not to lack of natural aptitude or of technical training, but to a lack of humanity —for want, that is, of the power to see the world as a whole, to understand the relation of their own work to the rest, to sympathise with the human interests which underlie the subject matter with which they deal. He will never be a great painter to whom a picture of Paolo and Francesca is merely an effect of tone and colour; nor a great doctor, who has no sense of the spiritual side of life; but judges all questions of health as if his patient had neither mind nor soul, but only a body. Even the professed student is not exempt from this law. The chemist fails for lack of the literary sense which would enable him to translate his experiments into ordered argument; the philosopher blunders because he has not mastered the principles of mathematics; the mathematician breaks down in higher geometry because he has never cultivated his imagination.

The boy who specialises too soon—that is, who devotes himself exclusively to one study before he has reached the necessary standard in others—prepares for himself a double failure. He unfits himself for the higher developments of his own subject, and he dulls the faculties of sympathy and observation which are necessary to success in practical life. When any of us, therefore, encourages a pupil to neglect his general education in order that he may win a scholarship and a first class, he is sacrificing the achievements of the man to the 'successes' of the boy. Byron, indeed, tells us that

> The myrtle and ivy of sweet two-and-twenty
> Are worth all your laurels, though ever so plenty.

But he judged the matter from the standpoint of enjoyment; we have to think of achievement. We need constantly to be reminded that the real test of a school education is not so much the 'successes' of its pupils at eighteen or even at twenty-two, but their work in the world of men.

It is easier to recognise the general truth of these principles (and they are but the commonplaces of educational theory) than to apply them to concrete instances of specialisation.

The age for specialising

Before we can attempt this application, we must answer two difficult questions. (1) At what age is it to be supposed that a

boy's general (or liberal) education is complete, and that he is ready to devote himself to the work of his profession or business? (2) What sort of reasons are to be admitted in particular cases for shortening the period of liberal education?

(1) There are two obvious turning points in the life of an ordinary boy: one, at about fourteen, when he grows out of the child into the boy; the other at about eighteen, when he grows out of the boy into the young man. No one, I imagine, would propose to end the wider education at the earlier of these epochs. The general practice of England and other countries, which fixes the time of leaving school as the extreme limit of general education, may be taken as the verdict of common sense, to question which would not serve any practical purpose. What we schoolmasters have to consider is whether there is a point before a boy leaves school at which he becomes ripe for 'specialisation.' In answer to such question one would like to give a reasoned statement; but in a matter of practical experience it is difficult to do more than state the result of one's own observation. Circumstances have given me unusual opportunities of observing the effects of different systems, and the following is the conclusion at which I have arrived. Up to the age of sixteen all boys ought to be kept rigidly to the full school course. After that age, a clever boy gains by being allowed to give up a portion of his regular work in favour of his special study, provided he has reached at least the fifth form of a public school. As he grows older, the specialisation may be somewhat increased; but under no circumstances should he give more than two-thirds of his time to his special subject if it is classics, nor more than one-half if it is mathematics or science or history. An average boy, on the other hand, should strictly follow the regular course. Or, to answer the question more directly, no boy's general education is reasonably complete before he is nineteen; but there is a period in the life of a clever boy when general and special education may be carried on concurrently.

(2) If the case is so strong against specialisation before a certain age, we must demand strong reasons for making any exception. However earnestly we may condemn the policy of the universities in offering scholarships for single subjects, so long as that practice continues it must affect our treatment of boys whose parents cannot afford to send them to the university unaided. The boy of first-rate ability in a good school is not harmed, for he can win his scholarship without specialising. But let us imagine the case of one whose ability is only moderate, and who, for some

reason or other, did not display it early. Suppose we believe that by devoting his whole time to mathematics from the age of sixteen he will succeed; are we to refuse him the chance of a university education? I think the answer must depend upon several conditions. Is he likely to get such real profit out of the university that he will recover from the evil effects of the forcing? What are his prospects in other directions? How much harm will his example do to the general conception of education which the school entertains? I have no hesitation in saying that many boys now go to the university with scholarships who gain no real good from the whole process. Instead of being useful and successful tradesmen, they become part of a discontented because unwisely educated proletariate. But if the case before us is of another kind—if we honestly think that the boy's life will be spoiled by his being denied a university training—then I think we ought to let him give up education for the time being and gain his scholarship. Such rare cases—for rare they are—will not prevent us from protesting against the mischief done by the ill use which the college authorities make of the public money at their disposal. In most cases I think the wise headmaster will say: 'He may give such and such time to his mathematics. If he cannot win his scholarship without more than this degree of specialisation, his abilities are not sufficient to warrant him in going to the university.' That is a very difficult and invidious course to take, but it appears to me to be the right one.

Let us assume that we have made out a case for a very partial and limited specialisation of clever boys between sixteen and nineteen. It becomes necessary to ask two questions as to the manner of conducting their general education through this stage.

Problems of education for exceptional boys between sixteen and nineteen

The first of these questions refers to the dangers arising from the predominance of one interest in an unformed mind. What are they, and how far can we guard against them? The most obvious danger is a narrow-minded contempt for all other knowledge but that of one's own subject. This is no fancy; the evil is very marked in the great day-schools where specialisation is overdone; and it is carried on to the universities. Besides that which is common to them all, each class of special student tends to develop its own mental disease. The classical scholar who has partially dropped other studies, is apt to care more for form than for substance; to fail in all kinds of exactness that are not verbal; to miss the point of reasoning about questions of physical science; to be ignorant of and indifferent to the modern

world and its movements. The boy historian is the victim of greater faults. Constantly dealing with social and political facts of which his limited experience does not enable him to see the meaning, he becomes superficial and often vain. His inability to reason about half-understood phenomena makes him lay far too much stress upon a mere memory for 'facts.' His style is usually either slovenly or truculent, because all his sentences are overweighted with knowledge which he cannot organise. In fact, he is a living example of the truth of Aristotle's remark, that the young are not fitted for the study of moral philosophy, because they have not enough experience of life. The defects of the chemist and mathematician are of another kind, and arise from the fact that their studies take them away from human nature. They suffer from a certain dryness and want of sympathy; they fail in consequence to see the point of reasoning about social and political questions; and their want of acquaintance with literature deprives them of the power of expression.

The second question to which I referred arises naturally out of the above considerations. In view of the dangers to which special study exposes a boy, how far can we help him by modifying our teaching of his other subjects? Let us suppose, to take a concrete instance, that Jones, after going through the regular course with credit up to the age of seventeen, decides to read for a mathematical scholarship. How will the change affect his attitude towards other subjects? Like other boys, he has only a limited amount of energy. If he gives his best efforts to mathematics, he cannot give his best to classics too. Devoting less time to Latin than other boys, and having less interest in it, he cannot make the same solid progress. Either he must fall behind, or he must be carried along without really covering the ground.

Suppose we insist that he must be thorough as far as he goes. A considerable proportion of the time devoted to Latin will then be occupied in keeping up his accidence and practising elementary prose. So his Latin will be to him little more than such a discipline in thoroughness as he ought to be getting from his special subject. It will not give him new ideas or the sense of progress. Is that a good way of spending the time? I think not. Certainly Jones will think it very bad; for no clever boy likes marking time. He will be bored, and inclined to believe that the study of Latin is waste of time. In other words, his Latin will not educate him; still less will it be an antidote to the faults to which he is peculiarly liable.

There is one alternative. Let those who are specialising in other subjects than classics do their classics apart from the 'scholars,' and on a different principle. Let them do a little Latin prose, but no other composition, and give most of the time to reading books in a 'literary' rather than a 'scholarly' way. They must learn to construe correctly, and know the subject matter, but take as little notice as possible of *cruces*, and of those minor grammatical, historical, and geographical points which are fair tests of the professional scholar's exactness, but are not strictly of general culture. They will be interested, they will learn much of men and things, they will profit by close contact with great writers, and they will learn far more than they can show in an examination paper. In this way their classics will be a real part of their education.

In like manner, there are two ways of teaching mathematics to those who have mastered the elements but are not going to be mathematicians. The first is to put them straight through the regular course, insisting on completeness and accuracy as far as they go. That is the usual practice, and it usually fails to produce any good results, for exactly the same reasons which were given in the case of Latin. The other plan (which I am bound to say I have never seen tried) is to teach them those parts of higher mathematics which are interesting, easy, and suggestive, and sufficiently independent to be treated separately. Such parts are the tracing of curves from the equation, the geometry of the cone, projections, and parts of elementary mechanics and astronomy. A boy who has gone intelligently though superficially through such a course will have learned a great deal that is worth knowing. He will have learned enough of mathematics, at least, to avoid superstition; that is, he will know what kind of results can be expected from mathematical reasoning. That such a plan of teaching is practicable appears to me to be proved by a former experiment of my own. Some ten or twelve years ago, when I was a master at Harrow, I devoted two hours a week to teaching geometry to some backward boys of fifteen or sixteen who had no taste for mathematics. By the end of the term a good many of them were able quite intelligently to trace a parabola from its equation, although they had never heard the name of conic sections; and they had learned many other things by the way.

The corresponding method of teaching science and modern languages will be obvious to any one who has followed me thus far. I say nothing of such a treatment for English literature,

because that and divinity are the two subjects in which all kinds of boys can be taught together.

I have written at some length about the treatment of candidates for scholarships, because their case presents the greatest practical difficulty. But what has been said will apply in a less degree to those numerous boys at the richer schools who, though they do not win scholarships, will read seriously for honours at the university. They go as commoners to the best colleges, and among them are often to be found some of the ablest men of the year.

Treatment of average boys who are intended for the university

These two classes together are outnumbered by those who are to be passmen. Generally speaking, boys of this kind are incapable of reaching excellence in any subject, but able to get a fair acquaintance with several branches of learning. The universities wisely require them to continue an all-round training till the end of their course. Consequently in their case there arises no question of specialisation at school.

Again, many schools have to prepare boys for the army examinations. About them there can be no question, for they must follow the course prescribed by the War Office.

The majority of public-school boys enter neither the university nor the army, but go direct from school into some trade or profession. Differing very widely in tastes, abilities, and prospects, they present us with a new and difficult set of problems. Given a boy of sixteen, who in two years' time is to be a wine merchant, a tea planter, or a civil engineer, is it best for him to follow the regular course of the classical or modern side, or to devote himself to some subject which will be 'useful' in his profession? Thirty years ago nobody thought of asking such a question at a public school. The boy who did not wish to follow the regular course was obliged to leave the school. But once admit the principle of adaptation to individual needs, and there are endless questions to be answered. A budding sanitary engineer wishes to drop German for extra chemistry; a future stockbroker proposes to exchange Latin for shorthand; a destined ranchero desires to learn nothing but Spanish and carpentering. Some of the wishes which parents of such boys express are obviously absurd; others are reasonable but impracticable; others, again, deserve serious consideration. Although each case has to be treated separately, it is clearly necessary to have rules for guidance, and the rules must be based upon principles. I will try very briefly to state the consideration

Specialisation of boys intended for commerce, &c.

which appears to me to deserve most weight in the framing of a policy.

In favour of allowing some degree of specialisation the following arguments may fairly be urged :

1. Boys (and especially dull boys) work with more heart when they see a definite object before them. That is why the army examinations, with all their faults, have done so much good.

2. A variety of aims in the boys has a stimulating effect upon the intellectual life of the school, provided that their main work is still done in common.

3. All teachers of experience know that many boys, at one stage or another, find they have reached the end of their tether in some subject. Perhaps this is most obvious in the case of mathematics. A boy may have done sound work up to a certain point—arithmetic, elementary algebra, and four books of Euclid—but be quite unable to get further. To keep him merely marking time can lead to no good intellectual result. It is then a real gain to let him drop the subject and try something new.

4. When two subjects are equal in value for intellectual training, that which is likely to be 'useful' should be preferred, because it will be kept up in after life.

On the other hand we must remember :

1. The best and most effective teaching in a school is class teaching. If the withdrawals from regular work exceed a very small number, the life goes out of the class, for to the good teacher empty places are disheartening ; and so a serious injury is done to the rest of the boys.

2. Boys who are withdrawn from the ordinary classes to work alone, or in small sets, must also suffer. Though they may not lose in point of knowledge, they lose what is to the average boy quite as valuable, the discipline, the stimulus, and the social life of the class. They generally lose also in industry. For although a clever boy, interested in his subject and working for a scholarship, can be trusted to make a good use of his time without supervision, the average boy without a very definite aim is sure to get into desultory and slovenly habits, if not into conscious and deliberate idleness.

3. Those who propose that a boy should give up one regular school subject for extra time in another, often forget one very important fact. Although a really able boy sometimes gains very greatly by concentrating his effort upon one subject, it is not so with the average intelligence. Doubling the consumption of coal

does not necessarily double the speed of a steamer, nor does doubling the hours of work double an ordinary boy's rate of progress. He may thus, for example, sacrifice the study of German with scarcely a perceptible gain to his Chemistry.

4. Generally speaking, the average boy who desires to specialise wishes to learn some one thing—Spanish, book-keeping, a branch of chemistry, &c.—which can best be learned by going for three months to a place where the atmosphere is full of it, so that he may take it in at all his pores. The best course then is that he should leave school a term earlier and go to such a place. Instead of spoiling his school education for a year or two and learning the special subject imperfectly, he will get the full benefit of school training and still be more advanced in his subject.

5. The most serious objection has yet to be mentioned. We want to maintain in our boys' minds that belief in the value of knowledge for its own sake which is the essence of a liberal education. Every approach to technical training, however small, must weaken this belief. The mind of a boy is a curved mirror which gives an exaggerated image of the opinions presented to it in his home. Consequently a large proportion of boys in our time are only too ready to dispute the belief that the object of education is first to produce a worthy and complete manhood. Aristotle said of the State that it was invented for the preservation of life, but maintained for its adornment—*γενομένη μὲν τοῦ ζῆν ἕνεκα, οὖσα δὲ τοῦ εὖ ζῆν.* There are many who would apply the converse to *παιδεία—γενομένη μὲν τοῦ εὖ ζῆν ἕνεκα, οὖσα δὲ τοῦ ζῆν.* 'Education was invented to promote nobility of life, but it is maintained to gain a living.' If we once let this spirit take possession of our public schools, it will more than counterbalance all the improvements in subjects and methods of teaching which the last fifty years have produced, for there will be no such thing as a liberal education.

The conclusion which I draw from these considerations is that specialisation should be encouraged only where its object is educational and not commercial. The possible gain to the individual in the latter case is small, while the certain injury to the school is considerable. To develop a boy's best powers is one thing; to sacrifice his training to the acquirement of useful knowledge for which he has no special taste is quite another. So that exceptions ought rarely to be granted to boys of average capacity who do not show marked ability in any one direction.

Do I then advocate a rigidity such as used to exist in the old classical schools? Far from it. I think every school ought to be

so organised as to offer three or four types of liberal education, suited to different classes of mind. In one, the higher literary training of classics should predominate; in another, the lower literary training of modern languages; in a third, science or mathematics, or both together. A school which is able to offer these alternatives can fairly decline to make special arrangements for individuals. But how is such an organisation possible? For the answer to that question I refer the reader to Chapter II.

Conclusion

M. G. GLAZEBROOK.

SCHOOL LIBRARIES

THERE are probably at the present time few schools either small or large which do not possess a library of some kind or other, and we may safely assume without further discussion that the school library is a necessary institution which may have, if properly organised and arranged, very considerable effect on the education of the young. It is, however, by no means equally clear that these libraries are organised on any very definite lines, or with a clear conception of what can and what cannot be accomplished by providing the pupil with suitable opportunities of reading. An attempt will therefore be made in this chapter to indicate, firstly, what are the legitimate ends which should be aimed at in the formation of a school library; secondly, what are the best means by which these ends can be attained. Here it should be stated at once that books must be considered as divided into two main classes—those whose primary object is to provide recreation, and by means of that recreation to produce certain beneficial results, and those whose primary object is to provide education and instruction, as well as recreation, in the highest and best sense. The effects which may be produced by a supply of suitable books of the first of these classes is undoubtedly great, especially in the case of the younger pupils; but the school which limits its library to these books, and these alone, cannot be said to have formed a very exalted conception of the functions of the library. It is to books of the second class that we must look as the most important means of educating the older pupils, and, as it is with their needs that this chapter will mainly deal, it will be assumed at once that our library is to consist to a large extent of books whose primary object is something more than mere recreation or amusement.

Libraries must be organised, not casual collections

Two classes of books—recreative and instructive

The library proper will consist of the second class

Schools will, of course, differ largely from each other both as to the possibilities of forming a library and in their individual requirements; but in the first instance the difference resolves itself largely into a question of *time*—*i.e.* the small school with limited means will take longer to form its library than the larger school with the longer purse; and in the second instance the difference of requirements does not really affect the main principles on which we shall hope to show that a library should be formed. These principles will apply to schools for girls as well as to those for boys, and in this discussion, where the pupil or teacher is referred to as 'he,' no exclusion of the opposite sex is intended or implied.

Schools differ, but principles on which library is to be formed will apply to all

We shall now proceed to discuss the question as to what are the legitimate ends which should be aimed at in the formation of the library. These ends must necessarily be closely associated with the whole theory of secondary education. In all schools the subjects that are taught, and, to a large extent, the way in which they are taught, are settled by influences external to the school—influences, *i.e.*, such as the requirements of the universities, of competitive examinations for the services, of the various professions, or of business and commercial life. Here, then, the schoolmaster is limited; and whatever may be his own theory as to the ideal education for the young, he finds that certain things *must* be taught, and his chief concern is to teach them as well and as effectually as possible. In other words, the greater part of the school work is of a definite routine nature, for which the pupil is paid by marks or their equivalent at school, and by a successful entry into one or other of the various callings of life when he leaves.

The aims of the library

One and perhaps the first function of the library must therefore be to provide such books as will afford the best assistance to this paid or routine work of the school. The nature of these books and their number will of course depend on the individual school, but an instance or two may be given which will probably include nearly all places which claim to impart secondary education. History and geography are taught in all schools. Now the pupil cannot be expected to provide himself with more than some one text-book, which even in higher forms must be more or less limited in range, and in lower forms must be entirely elementary. Nor can the master be expected to provide himself with all the larger works on these or any subjects. But the master who is content with simply hearing so many pages of

1. To aid the routine work of the school

history cannot claim to rank as a teacher. The teacher will want to stimulate the interest of his form by reading to them, if the pupils are young, perhaps a Paston Letter to illustrate the insurrection of Jack Cade, a passage from Froissart or the Chronicle of Edward Hall, or a page of Motley, Freeman, or Froude. He will try to draw maps of battles and sieges, and will want to be able to turn perhaps to Napier or Kinglake, or to a life of Clive or of Nelson. In geography he will want to refer to a really good atlas, and will take opportunities to read from time to time the *ipsissima verba* of those who make our geographies for us—of Hakluyt, Anson, or Cook, or of Livingstone, Stanley, or Nansen. The same principles will apply to other subjects. In a classical school, the master must be able to refer to and to use the best editions of classical authors and the latest editions of dictionaries and other works dealing with classical criticism. In the lowest forms, as has been said, the teacher will use these books to give life and interest to the lesson; but with older pupils he will say, 'If you like to go to the library you can read in such and such a book all about this or that event or place or subject.'

2. To assist voluntary work and education in the highest sense

Here we pass to the second great function of the library—its power to assist not only in the routine work of the school, but in education in a higher sense. The pupil who 'gets up' a lesson conscientiously, or who listens to and assimilates all his teacher has to say, will no doubt be successful at school, but an enormous advance will have been made if he can once be induced to try and find out something about his work on his own account. In other words, the learner must be induced to become in a greater or smaller degree a student. The routine and paid work of the school, although necessarily coming first in logical sequence, must not be considered as the 'be-all' and 'end-all' of school life. Indeed, it is not even an end in itself, but rather the means to an end—an end which is not the mere acquisition of so much knowledge to be retained only for a limited time, but is rather the training of the mind in such a way that a boy on leaving school may have a taste for the acquirement of knowledge, and may, moreover, know how to work when released from the supervision and restraint of school life. Teaching has become of late years so systematised and thorough, such efforts are made to remove every difficulty from the path of the learner, that we run perhaps too great a risk of destroying initiative on the part of the pupil, who finds too often when

school is left that he is quite unable to work without the help of a teacher.

The library, then, will afford not only the best opportunities of doing voluntary work, but by its means the learner may gradually be led on to taste the supreme pleasure of finding out things for himself. Lessing, Goethe tells us, on one occasion said that if God would give him truth he would decline the gift and prefer the labour of seeking for it himself. We cannot, indeed, expect that all or even many boys will ever be brought to sympathise with Lessing; but the library will have amply justified its existence if by its means only a small proportion of readers are brought under the magic spell of an independent search for knowledge.

But the use of the library does not end here. It should also afford opportunities for the development of individual tastes and pursuits outside the ordinary routine work of the school. All observant teachers must have noticed instances of boys who, though hopelessly dull from the schoolmaster's point of view, have shown themselves in after life to be possessed of real ability and talent. Perhaps, too, many dull boys remain dull owing to the failure of the school to discover and educate the latent germ of intelligence which is seldom altogether wanting. Every endeavour, no doubt, should be used to make the boy thoroughly interested in some part of the routine work of the school. But there are cases where this is impossible, and then it is surely wise to give, while exacting a certain necessary amount of compulsory or routine work, every possible opportunity for the pupil to discover some subject or pursuit in which he can feel a real interest. By these means it may often happen that the seemingly dull boy will develop into a man with intellectual instincts and tastes.

3. To encourage the development of individual tastes and pursuits outside the ordinary school routine

The library, therefore, should provide good books on such subjects as Natural History, Geology, Science, Painting, Drawing, Architecture, Music, Numismatics, and Archæology. If this should appear to some to be rather a formidable list, it should be remembered that no subject need at first be represented by more than one or two books. And if Numismatics and Archæology should seem to be subjects rather outside the sphere of school life, it must not be forgotten that boys and girls will often collect such things as coins and flints, and that the function of the library will be to turn these tendencies to account by supplying the right kind of information.

Under Archæology should be included especially books on local antiquities and customs; and every opportunity should be given to encourage the habits of observation and inquiry. The presence in the neighbourhood of a school, of a battlefield, a castle, a cromlech, or a hill-camp, is an educational opportunity which should be turned to the fullest account.

Again, it is obviously of importance that the pupil should make himself acquainted with the general course of contemporary events.

4. To supply the pupil with information on the current topics of the day

He must know something, in outline at any rate, of the chief political questions of the day, and be able to take an intelligent interest in what is going on both at home and abroad. The debating society and the writing of essays may be perhaps the chief means of exciting an interest in subjects of this kind, though here, as a rule, the pupil requires no artificial stimulus. But the library will be the best if not the only means of supplying the required knowledge, and of securing the most recent information. The library will therefore provide books which treat broadly and fairly of the political questions of the day, as well as some of the leading periodicals and reviews; and the librarian will doubtless take advantage of such events as foreign wars, or the recent expeditions to Chitral, Ashanti, Dongola, and the Arctic Regions, to place in the library a large scale-map of the countries in question, together with one or two of the latest books on the subject.

Again, both the pupil and the teacher ought to know something of the chief scientific and literary work that is being done at the time, and, therefore, if funds will permit, the library may include in its outlay subscriptions to learned societies, and even go so far as to assist in work such as that which is now being done by the Egypt Exploration Fund or the Society for the Promotion of Hellenic Studies. The Proceedings and Transactions of the Royal Society ought certainly to be procured by all schools where science is largely taught, and the 'New English Dictionary,' and the 'English Biographical Dictionary,' the 'English Dialect Dictionary,' and other works of a similar kind ought to receive the support of all schools whose funds are sufficiently large to justify the expense. Boys and girls from sixteen to eighteen years of age should be made to feel that they are citizens of a larger State than that which is inclosed within their own school walls and implied by the somewhat narrow limits of school editions.

And keep him acquainted with the literary and scientific work that is being done in the world

Lastly, we come to what is by no means the least of the ends

which should be kept in view in the formation of the library. This end, which to a certain extent is included among those already discussed, but is yet separate from and more far-reaching in its effects than any of them, is the formation of a literary taste, a love of reading for its own sake, which is satisfied not by the perishable novels of the day, but only by those books which are really the 'pretious life-blood of a master spirit imbalmed and treasured up on purpose to a life beyond life.' We cannot, alas! always depend on the reading of an English author in form or in class for the awakening of that genuine taste for books which Gibbon tells us was the pleasure and glory of his life. Indeed, there are probably many whose indifference to Shakespeare and Milton may be directly traced to the school lesson, with so much to be 'got up' by the pupil at the price of a penalty in some shape or other for failure to comply with the demands of the teacher.

5. To encourage a love for reading, and help to form a sound literary taste

But in the library the books make no demands on the patience or endurance of the reader. They are there to be read, if he likes and as he likes, and when taken down from the shelves their open pages suggest no thought of compulsion save that which is exercised by the 'master spirit' over the fascinated mind of the boy or girl who discovers for the first time that literature is something more than a mere school lesson.

English Literature will accordingly be represented as fully as possible on the shelves of our library, which will contain the works of all the great and most of the lesser poets and writers of prose, at any rate from Chaucer to the present time. To these must gradually be added such books of criticism as may help both teacher and pupil to arrive at a more complete knowledge of the authors in whom they are interested; and a place will be found for the critical works of Gervinus, Coleridge, Ten Brink, Saintsbury, Matthew Arnold, John Morley, and others, as well as for those biographies of which the writers may claim literary rank.

The History shelves will have already supplied all that is best in History from a literary point of view; and the same will have been done in the shelves devoted to Classical Authors. But we ought not, perhaps, to stop here, but should endeavour to add a few, at any rate, of the chief French, German, and Italian classics. Corneille, Racine, Molière, Dante, Petrarch, Goethe, and Schiller should be included, either in the original tongue or in the best available translation.

Our library, then, will contain most of what is best and nothing

that is bad of the available stores of ancient and modern literature; and, if boys and girls can only be tempted to read, the formation of a healthy literary taste may safely be entrusted to those 'silent servants,' the books themselves.

Some attempt has now been made to indicate what are the legitimate ends to be kept in view in the formation of a school library, and here it may be as well to briefly recapitulate them as follows. The library should as far as possible—

1. Aid the routine work of the school.
2. Encourage voluntary work.
3. Encourage the formation of individual tastes and pursuits outside school work.
4. Make the pupil acquainted with the social and political topics and with the chief intellectual work of the day.
5. Foster and encourage a love of reading, and thereby form a sound and healthy literary taste.

The books which our library contains will be divided into groups, which may be classified somewhat as follows: English Literature, Classics and Classical Criticism, Divinity, Modern Languages, History, Biography, Geography and Travel, Chemistry and Physics, Geology and Natural History, Politics and Philosophy, Philology and Criticism, Art and Archæology, Books of Reference, and, lastly, Periodicals, Reviews, and Publications of Learned Societies.

The means by which these ends may be accomplished

We must now pass on to consider in a somewhat more detailed manner the means by which these ends can be accomplished; and, having already indicated generally what subjects are to be represented, we shall now proceed to define more narrowly what books and editions are suitable to our library.

Choice of books

To give anything like a detailed list of books is obviously beyond the scope of this chapter; but in the choice of books there is one principle which should be adhered to in all departments of the library—that is, that all books should be the best of their kind, and should not in any case be inaccurate or merely popular compilations. Great harm may be done by accustoming the minds of pupils of seventeen or eighteen years of age to a false or even low standard of learning.

The young should not be allowed to learn things in a way that requires to be unlearnt when more serious study is attempted. But the books which the student finds in the library should be of such a kind as to make him familiar with the best and latest work that is being done in the subject. This, of course, often means

additional expense; but, after all, what matters most is not how many, but how good are the books which are read. Accordingly, to take a few illustrations, if the object is to encourage collectors of birds' eggs, one book such as Mr. Seebohm's will be preferred to any number of cheaper manuals; if a Chaucer is to be bought, an effort will be made to secure the latest edition by Skeat; and Hill's edition of Boswell's 'Johnson' will be preferred to cheaper or older editions of the work. In the same way, mere school editions of the classics will be excluded, and preference given to those by the best scholars in their original and unshortened form.

The History shelves will contain not only the standard works which treat broadly of the history of Greece and Rome and of Modern Europe, but, in the case of our own country, they will also contain books which deal with special events or periods, such as those by Napier, or Kinglake, or Mahan, or by Freeman, Gardiner, or Lecky. The history of India and our colonial empire will also receive special attention.

Again, in all subjects it is desirable that those editions should be selected which are well printed and worth binding. Cheap editions on poor paper are, as a rule, but a poor investment. This extra expense must often imply a somewhat gradual and slow increase in the library; but the formation of a good library must necessarily be a matter of time, and regard must be had to the future as well as to the present.

Again, the question may arise as to the inclusion of many books which are undoubtedly good but whose interest cannot be more than purely ephemeral. Such books should be purchased with a sparing hand, and, as a rule, it will be sufficient to borrow them from one or other of the great circulating libraries.

Old books and editions

With regard to old books, old editions of the classics, or notable editions of English authors, however pleasing it may be to possess them, they will generally be rightly considered as outside the sphere of all but the larger schools. On the other hand, where they are offered to the library as a gift they should be warmly received. Apart from the mere bibliographical interest, the sight of a book from the Aldine press, or from those of Baskerville or Foulis, or of an edition by Stephens or Burman, may give an incentive to the love of books which is certainly not to be despised. And, when once a good library has been formed, it will be found that such gifts will be made from time to time.

The question may here be asked whether the library is to admit only books which will be read by the pupils, or whether room should also be found for those books which are likely to be read only by the teaching staff of the school. In starting a library, it would seem to be wise to limit the purchase of books to those which the advanced pupils may be expected to read; but, as everything which improves the mind and culture of the teacher must react favourably on the education and training of the pupil, it would certainly seem to be unwise to exclude books simply because they are too technical or too difficult for any but an adult intelligence. Hence books on philosophy and books of criticism, French and German authors, and purely technical works, may be added when the library has already grown to appropriate dimensions.

A library committee

The next point to be considered is how the new books are to be selected, and how the balance between the various divisions of the library can be most effectually maintained. In some cases the only method will be to entrust the whole matter to the hands of one person, who would generally be the headmaster of the school. But, where the size of the school and other circumstances admit, a better plan is to form a committee consisting as far as possible of representatives of the various departments of learning. Each member of the committee will make it his business to ascertain what are the best books in his own subject, and a general meeting of the committee will decide on the relative claims of this or that department of the library. But it will probably be found desirable to include in this committee representatives of the pupils, who will thus hear the claims of this or that work discussed, and will accordingly, especially if they are allowed a vote in the decisions of the committee, be led to take a keener and more active interest in the welfare of the library. The functions of librarian will be discharged by some member of the staff; but here again assistance from one of the school representatives on the committee will be useful both to the librarian and to the school.

Catalogue

The all-important question of the catalogue is too technical for discussion in this chapter, but the following general principles may be briefly indicated. The librarian must decide between the rival merits of an alphabetical catalogue by authors' names, a classified catalogue, or the dictionary catalogue, which is mostly in vogue in America. Whichever plan is adopted, the entries must be made according to a definite set of rules, which

must be strictly adhered to. A catalogue which is made on no definite system, or according to the varying fancy of successive librarians, is worse than useless. Titles need not, perhaps, invariably be entered in full, but they should always contain sufficient information to insure the identification of the particular book and edition. If any of the names on the title-page should happen to be those of old members of the school, this fact should be indicated in the catalogue. This will help to maintain *esprit de corps*, and be a valuable incentive to the production of good work. The entries should be written on slips or cards, which are afterwards arranged in drawers. These cards can, if necessary, be kept in order by a thin rod which passes through the front of the drawer through holes in the cards, and is fastened into the back of the drawer by a turn of a screw. The drawers should be marked on the outside to show what letters or subjects are included in the contents. The advantage of this system is that, while it is quite easy for the reader to manipulate, it permits of indefinite extension.[1]

Shelf arrangement

The arrangement of books on the library shelves must depend on the individual capabilities of the library. It will probably be found impossible to adhere to any very detailed classification of subjects, owing to the constant rearrangement which the growth of the library will necessitate. But it will be found desirable to adopt, at any rate, a rough classification by groups of subjects. A pupil should know where to find the books on History or Classics or Science or Literature, and he will learn more from an intimate acquaintance with the shelves than from any amount of study of a subject catalogue.

Rules

Rules will of course be drawn up to regulate the use of the library, and the pupils themselves should take a share both in framing and in enforcing the regulations. The older pupils and teachers may perhaps be allowed to borrow certain books for their private use; but dictionaries, cyclopædias, and all books of general reference should be confined to the library. The rule of silence should be rigorously enforced. The pupils should be permitted free access to the shelves, though, to prevent books being wrongly replaced, it may be found desirable to leave the replacing to the hands of a librarian or assistant.

[1] Much useful information on this subject will be found in papers published by the Library Association, and more particularly in a little book called *How to Catalogue a Library*, by Henry B. Wheatley, F.S.A. (London, 1889), published by Elliot Stock.

Building

The building or room in which the books are placed should be chosen with due regard to light and warmth. The library should be a room where the student may read in comfort and without interruption.

Funds

If there are no special endowments on which the library can depend, funds may be obtained by voluntary subscriptions from parents, or by exacting a small sum annually or terminally from each pupil. Pupils who leave from the upper part of the school may often be willing to present a book on leaving, and the librarian will be ready to give advice on the choice of the book. A list of the works added to the library should be circulated each term among parents and pupils, and, where books are presented, the donor's name should invariably be mentioned. This will be found largely to increase the interest which is taken in the library by present and past members of the school. The librarian will of course avail himself of opportunities of purchasing from second-hand dealers. By waiting two or three months, new works, in excellent condition, may generally be obtained from Mudie's and other circulating libraries at greatly reduced prices.

Books of recreation will form a secondary library

In the construction of our library no provision has yet been made for the supply of works of fiction, or of those books whose chief function is to provide recreation and amusement. But this side of the question is by no means unimportant, and every school ought to have an ample supply of books of this class suited to pupils of every age. For pupils in the lower forms there are, moreover, many excellent works of fiction by Henty and others, which will not only provide recreation, but will materially help the teacher in lessons on History and Geography. It will, however, be probably found advantageous to keep this class of books entirely separate and distinct from the library which has been described above. The purchase and the management of these books may possibly be under the control of the same authority; but it will be well to draw a line between the two classes of readers, and to devote the library proper to the objects which we have already indicated. As a rule, the pupil will prefer to take books of recreation into his own possession, and this secondary library will therefore be chiefly a lending library, although it may be as well to provide a room where the reader may enjoy peace and quiet.

In large schools, each house or dormitory may possibly organise and arrange its own lending library; but where this is an unsuitable arrangement it will be found an excellent plan to distribute all

books of this kind among the various classes or forms. The advantages of this system are that the teacher can, to a certain extent, direct and control the reading of his class, and the books themselves can be classified and arranged according to the age of the pupils. Thackeray and George Eliot are obviously unsuited to the child of thirteen, who may be reasonably expected to be more interested in books by Marryat, or by Fenn and Henty and other similar authors. If a library for every class is not convenient, the whole school can be divided into blocks, such as upper, middle, and lower, and a separate supply of books assigned to each. One of these libraries should include some of the best French and German novels, which should be at the disposal of one of the teachers of modern languages.

In the choice of books of recreation great care should be exercised. No books of a harmful tendency should be admitted; but, above all, the lending library must escape the imputation of being dull. It will not of course be exclusively confined to works of fiction, but it will include Poetry, Travels, Biography, and popular books on scientific subjects, together with books on school games and sports. In fact, the main object of the lending library must be recreation and amusement; for, if the reader detects in every book that is given him an attempt to improve his mind, he will turn from it in disgust, and the only result will be a surreptitious supply of books of a doubtful kind. Here, if anywhere, the maxim is true —*Ars est celare artem.*

In a well-organised school the games and amusements and recreation of all kinds will be so arranged as to give valuable aid to the healthy development of the mind of the pupil; but books, no less than games, must be attractive in themselves if they are to be an important element in school life. To the lending library, then, the pupil will look for amusement and recreation alone; to the larger library—the school library in the proper sense of the word—he will be attracted by motives of self-improvement, or, by what is better still, the growing love of intellectual pursuits for themselves, which is the true mark of the educated man.

A. T. MARTIN.

HEALTH AND PHYSICAL CULTURE

I.—*Introduction*

I CANNOT, *in limine*, emphasise too strongly the proposition that the genuine education of a child—would that I could here assert a Fact in place of expressing a Theory!—*should* be the production of the highest type of Life, consonant in each case with fitness and capacity, directed to the definite End of the completest performance of duty in the world.

The aim of education

This effort is, to a large extent, carried out in the rearing of domestic animals, but is mainly ignored in the training of human beings. For, in how few instances does even the most conscientious teacher distinctly place before himself the task of developing the child into the finest form, physical, mental, and moral, of which its nature is susceptible, demanding, as this process does, a studious discrimination of individual cases.

The rearing of the child

The answer of the teacher, in defence, will be that the illustrations are not parallel, since his concern is not the breeding of the child; so that the instance cited of domestic animals is irrelevant. In reply I point out that even though the parallelism be not precisely complete, yet even with the poor material at his disposal, with methods less coarse, and with a more intelligent survey of his subject, the teacher could obtain infinitely more satisfactory and permanent results.

No one will gainsay the truth that the teacher is too apt to attempt to pass all his pupils through the same mill, totally regardless of individual capacity, with the consequence that many lag behind, practically uncared for, and are regarded as clay scarcely worth the moulding by the potter's art; while apter pupils are fostered and frequently forced beyond their powers, where less personal attention and a larger dependence upon the native individual force of character

The child must be individually considered

would prove the truer method. The teacher has not always grasped the fact that in the long run the slow-developing brains often outstrip those of quicker growth, and achieve better results, eventually, under the genuine test of the battle of life. Were the individual *pupil* more considered by the teacher, rather than the éclat of the *school*, both child and teacher would more fully benefit.

The child is a *whole*, and, if its welfare is worth consideration, disaster can only attend a one-sided development, from whatever point of view it may be essayed. And, unhappily, this question will never secure adequate attention, until all teachers receive an appropriate technical instruction in the Science and Art of Education.

Intellectual versus moral education

The teacher must be taught, and understand, that the brain is only capable of exercising a limited amount of force, and if excessive demands be made on the intellectual side, the result is obtained at the expense of moral aberration; while on the other hand too rigorous a moral discipline is apt to be accompanied by intellectual deficiency. And not only so, but the development of the body is ignored, with the result of an inferior physique as an instrument of mind. Even the culture of the brain often, under existing methods, consists in the mere learning of lessons, rather than in the educing of faculties, and consequent expansion of intelligence.

Vicious school systems affecting health

Scholarships

A 'lower depth,' again, appears in the grant of 'scholarships' not for the general cultivation of the child, but solely for the reputation of the school. Where a scholarship might prove financially a boon to a child, it frequently fails to come within his grasp, for his parents may be unable to afford the requisite tuition which would enable him to compete.

The baneful effects of premature scholarships

But apart from this question, I have no hesitation in saying, after a long experience, mature consideration, and with the requisite knowledge for gauging results, that in a large proportion of instances an early scholarship is positively harmful to the individual child, especially scholarships which are assigned on entering a secondary school at fourteen years of age, rather than those which are granted at a maturer age on leaving school at the age of nineteen for the University.

At one time the child is pressed from an early age in order to obtain it; having attained it, he is placed at work in excess of his unforced capacity, and constant pressure is thus maintained

throughout his school career. If scholarships, when gained, are to be retained without harm, the recipient should be placed at least two forms below the standard of work he had only reached through pressure, and thus be enabled to work at his normal or uncoerced capacity, with the opportunity perhaps of sometimes resting on his oars, and so mitigating, to some extent, early forcing. With this absence of compulsion to maintain an exaggerated standard of work for the reputation of the school (which is the form of return-payment the pupil is expected to make), we should less frequently be depressed by specimens of stunted physical, intellectual, and moral growth.

The teacher's pressure

At another time, as soon as the scholarship is obtained, the recipient's brain becomes stale from premature pressure, and no further work of value, if even more lamentable consequences do not ensue, is ever produced. The result is that the scholar is blamed and thought lazy, whereas it is the school methods which are entirely at fault. Forced work levied upon the immature brain tissue is not only valueless in the long run, but positively and permanently injurious to the nascent nerve tissue.

I have hitherto pointed out that the schools themselves are mainly to blame; but I am bound to add that I cannot exonerate parents. For some will move heaven and earth, however wealthy they be, to gain a scholarship for their child, and the schools, unfortunately and unwisely, pander to the parental desire. Were scholarships honourably assigned as a pecuniary aid to a poor but deserving pupil, their real value would be displayed. And unless a speedy change in the system occur, abolishing the present necessary pressure, schools, instead of advertising scholarships, will require to advertise 'No scholarships awarded to pupils at this school.'

The parents' pressure

The value of scholarships

It is almost inconceivable, again, that it neither occurs to parents nor teachers, where a child is largely brains without physique, that the chief aim in its education should be the development of the body, at the only stage when it is plastic, and the concurrent resting of the brain in aid of this effort. For, unless this course be pursued, the whole of the nervous energy required in the process of physical growth is consumed by the over-active brain. I continually see children whose mental faculties are abnormally acute, but housed in the puniest and poorest frame; such a partially developed child, however, is constantly pressed on in the one direction to the increasing atrophy of his body, and the ultimate degeneration of the whole

Brains without physique

being. The usual popular eulogy on his premature death that those 'whom the gods love die young,' should rather take the form of a solemn verdict of condemnation upon the vicious system of education of which he has been the victim.

The appropriate training should, on the contrary, take the form of ample outdoor exercise and sport. There are a few bright instances on record where a child's poor physique has been regarded, and he has been 'turned out to grass' on the farm, on the mountain, or on the ocean for a couple of years, and has returned to school-life with a well-developed body not only competent to hold his own, but even to excel his compeers.

Thus we revert to my earnest contention, addressed especially to headmasters and headmistresses, that the *individual* is often neglected; and that all pupils are subjected to the same undiscriminating process, and worked, if they possess wits, to the very verge of mental destruction as the 'showboys' of the school, with total disregard to future fitness for the world.

The appreciation of these elements in respect of the individual child forms the basis of Health and Physical Culture.

II.—*The Teacher*

It is important to bear in mind that I include the male and female teacher and child in my survey, except where I specially refer to girls.

The genuine educator is concerned with everything connected with life at school, from the health of his assistants and his pupils to the condition and suitability of the buildings and premises generally, in recognition of the fact that these, as well as the routine of work, largely and rightly depend upon his judgment and knowledge.

The educator's instinct

Such conditions as overcrowding, overworking, underfeeding, and insanitary surroundings, he refuses to tolerate. And where the real educator perceives that his office is a high and solemn one, and has thoroughly prepared himself for the trust, every difficulty can be surmounted, for his heart inspires the work.

He will regard those placed under his care, at the most malleable period of their lives, as children with bodies, brains, and souls to be prepared for this world and the next. If he fulfil his duty, he must show keen sympathy with the children dependent largely upon his wisdom for health, happiness, and subsequent utility—sympathy, I mean, with their weakness and inability:

with their troubles, perhaps insignificant to the teacher, but often momentous to the child: with their foibles, even with their waywardness and perversity, so that correction may be rather of the nature of wise training than of punishment. The hold he exercises over them, whether of affection or dread, would be manifest in their countenances. The instinct of the educator recognises, too, that restlessness and inattention are frequently the result of physiological causes: that they are really the child's sanitary sense, indicating not merely that nascent muscles are incapable of prolonged quiescence, but also that they are especially prone to restlessness under close conditions of atmosphere—the restlessness being the natural craving for freshness of air.

This instinct should also perceive that the remedy does not consist in reproof and punishment, but demands a few minutes' running and shouting in the open air, for exercise of the muscles, distension of the lungs, and purification of the blood, while meantime the windows and doors are thrown wide open for thorough ventilation. He will also be cognisant of the fact that dark, hot, ill-ventilated class-rooms and dormitories are sure breeding-grounds of the *bacilli* of disease.

The responsibility of headmasters and headmistresses to assistant teachers is onerous and supreme; and its adequate fulfilment is not so common as to make a word of solemn warning and remonstrance unnecessary here.[1]

Education versus teaching

The teacher too often forgets, as I have stated, the real nature of his office, and considers that his duties begin and end with instilling daily a certain amount of knowledge into the pupils' memory, in obliviousness of the

[1] Dr. Dukes' sense of the importance of this point is by no means exaggerated. He admits that there are very many heads of schools who unwisely overwork themselves in the too assiduous discharge of their duties; but there are others who either through inadvertence or ignorance of the secrets of management permit their subordinates also to overtax themselves. All teachers, and especially women, should know that the teaching which is a physical strain, which takes 'the last ounce' out of one, which is not cheerful, which is accompanied by fretfulness, peevishness, and impatience, is the root of the direst mischief to both teacher and pupils. The Time Table should allow sufficient intervals between successive lessons to enable the teacher to rest and collect new energy for a fresh task. Women should be able to lie down for a while, and should certainly do as much as possible of their teaching literally *ex cathedra*. It is hardly credible that there are schools where to take a seat whilst teaching is regarded as a mark of incapacity. But I can vouch for it.—P. A. B.

necessity of discrimination of individual capacity. This may be teaching, but it is not education. The duties of the educator embrace a wider scope than those of the teacher. The genuine educator measures carefully the capacity of each pupil: studies their peculiarities: insures their health and happiness: sees that adequate sleep is provided, with sufficient food and exercise; and, in brief, prepares each in completeness of service for his work in life.

The best handmaids to the thoughtful educator are the scales and measure, since they indicate at a glance, and beyond dispute, the physical condition of the pupils. For instance, if the whole of the members of a school are deficient in height and weight in respect of their relative ages, it is clear that the entire régime is out of gear; while if only one pupil here and there exhibits a deficiency when thus tested, it is equally certain that the child is suffering from some constitutional delicacy: from insanitary surroundings: from overwork, through ill-advised or excessive tasks, or in consequence of unduly prolonged hours of work: from insufficient sleep: from underfeeding; or from growing too fast, as revealed by the disproportion between the height and weight.

The scales and measure

It is thus manifest that I regard mere teaching as a comparatively subordinate feature in the educational curriculum, while I deem the remaining duties, which I have mentioned, as of paramount importance. The teacher who recognises his responsibilities knows each of his pupils personally, and though I do not intend to imply that a headmaster of five hundred or a thousand boys can directly compass this knowledge, he yet does so through his assistants. In this way he can gauge their condition of health as well as their conduct. The general appearance testifies to their well-being or the reverse, whether they reside at school or at home; and he can single out, for inquiry, any pupil who appears unwell or unhappy.

Personal knowledge of pupils

A friend of mine told me that he 'shakes hands' every night with every boy under his care on his way to bed, considerably over one hundred in number, and found this practice an inestimable aid in his work. The heartiness, or dulness, of the grip itself, and the dryness or moisture, heat or coldness of the skin expressed much: the countenance revealed more: while the boy's failure to look him in the face spoke volumes. The happy, healthy boy passed with a cheering word: the one who was ailing or unhappy was thankful for the sympathetic invitation, 'I want a

word with you :' the purport of which no one knew but master and boy, but the result relieved many an aching heart, and arrested many a downfall.

III.—*The Pupil*

Let us bear constantly in mind the fact that the pupil is placed under the teacher's care for harmonious development as a complete Being. Until this fact is firmly grasped by those one-sided teachers who still regard their duties from the teaching aspect alone, I would strive to impress this consideration.

The intellectual aim of the teacher

The specific intellectual aim of the teacher's work is the development of the brain, whose tissue consists of cells and fibres of nerve matter which are as capable as the muscles of increased growth and vigour under exercise. If this work be injudiciously pursued, the growth of the brain tissue is stunted ; for it is an inevitable law that immature tissues are incapacitated and deteriorated by excessive labour. And yet every one is supposed to be naturally and instinctively qualified to teach ! No assumption could be more fatal, or fraught with more malign influence upon the children, who bear throughout life the evil effects of its adoption. The effectual training of the young is a subject of national concern, involving tissues that permanently affect the character of the race and the future progress of the world.

Brain development

The meaning of the work at school is, apart from the attendant moral discipline and the physical culture, the development of the nervous tissue in the head—the brain—to the highest perfection, exactly as the gymnasium instructor endeavours to promote the vigour of the muscular system. And as the latter sometimes forgets the proper object of his instruction, and trains his squads in a mere series of tricks for the purpose of exhibition, so intellectual teaching is apt to degenerate into similar artifices for purposes of examination, and the brain is damaged in the process.

So nicely must the teacher discriminate in the process of education, that much thought and time must be expended if he aim aright. Each child possesses its own proportionate stamina and mental ability. The ability may exist potentially in abundance ; but of what avail is it, unless the physical vigour be sufficient to provide a plentiful supply of healthy, red blood to feed the brain ? And whence is this derived except as the result of efficient digestion, which can only be produced by appropriate

food, fresh air and exercise, and ample sleep? Yet how few teachers trouble themselves to see whether children masticate, or bolt, their food; and what insufficient sleep is usually permitted, especially to the younger children, for supplying the loss by wear and tear, and insuring the formation of new tissue! These cases are regarded by the majority of educators to be beyond the pale of their duties; I maintain that they constitute their essence. I would call attention to the fact that the unassimilated knowledge with which the pupil's brain is so continually crammed is as valueless, and indeed injurious, to the brain itself in facilitating its expansion, and aiding the subsequent career in life, as undigested food is to the body; it simply irritates, and prevents nourishment and adequate development.

The mental fatigue and confusion, again, arising from the disorderly crowding of new impressions into the child's brain are severe, and yet ignored.

The importance of nerve tracks in the brain

Every brain is the product of many generations, and all the nerve cells, fibres, and tissues work naturally and freely as they have been trained and taught to work in ancestors from whom they have evolved. The blood has been mainly accustomed to nourish muscles; the teacher suddenly requires it to nourish brain. The sensory apparatus has been wont to obey external stimulus; now the senses, sometimes violently, are arrested into quiescence, so that the child may be stimulated from within. The nervous energy must flow in new channels; the Will must somehow control, in unaccustomed ways, the entire nervous structure, and compel it laboriously to perform fresh work instead of pursuing well-beaten tracks. The whole machinery of life must be remodelled; and nature frowns upon these abrupt revolutions. It is true that the 'genius' sometimes springs from a previously uneducated and practically dormant source; but this is analogous to the 'sport' in the vegetable world, well known to the gardener, and recognised as an unnatural, though much-prized, growth. The brains of children whose forefathers have led a muscular life need the gentlest handling, since their nerve tissue is unfit for pressure. It is thus palpable that what may be hard work for one child is scarcely work at all for another.

Exercise of function is not only essential to growth and development, but also to the healthy maintenance of the brain and body when normal growth is attained. In the performance of work energy is expended and finally exhausted; and this end arrives

sooner in the young, who are deficient in 'staying' power, than in those whose tissues are matured. Moreover, the young have to tread, to them, unbeaten tracks, which consumes more force than the pursuit of more accustomed studies. This opening of new ground necessitates exertion, and unless the exertion is attended with pleasure, it is apt to become harmful. Hence the importance, on the teacher's part, of studying the pupil's 'likes and dislikes' of a real character, and of fostering work for which he shows a taste, slowly adding that which is at first distasteful. In fact the appetite for work is very similar to the appetite for food; the child will not only thrive, but grow fat on that which it likes, while it will eat so sparingly of what is unpalatable that the body suffers.

Mental exercise essential for brain development

As variety of food is essential to the adequate development of the body, so change of work is imperative for due development and nourishment of the brain; and production of the finest and most permanent effects in strength and durability of tissues by graduated and regular development of the body, finds its analogue in the growth of the brain.

IV.—*The Culture of the Mind*

I have now made it clear that I regard the period of Life at School as allotted to the complete development of the human being. To insure this not only is work essential for mental development, but physical exercise, which should take the form of play, or 'games,' is equally necessary for the development of the body, and I desire now to point out strongly, and will subsequently amplify, that these games also influence the character, and assist the teacher enormously in the attainment of a right course of conduct.

For without the healthy performance of the functions of the internal organs, which involves the digestive, respiratory, and circulatory systems, and is dependent upon fresh air, exercise, and exhilarated spirits, a well-developed body is impossible, since it is these organs which supply the appropriate nourishment for brain and muscle.

Physical culture essential for brain growth

As I am referring to secondary schools, my remarks relate to pupils between the ages of thirteen and nineteen. And it is scarcely conceivable that it should be necessary at the present date for a physician to point out to the educator that the un-

reasonable rule of requiring younger children to work the same number of hours as the elder still prevails. With undoubted exceptions, children of thirteen are kept at work as long as young men of nineteen. The work levied, consequently, from the younger children in all schools invariably errs in excess. This unreasonable and unjust demand will meet, I know, from the teacher, not a justification, but a statement of the difficulty involved in any other plan. But difficulties must seriously and deliberately be faced and overcome when grave wrong is otherwise perpetrated upon the weak and helpless.

Work should be assigned according to age

I do not assert that the work *can* be curtailed, but I insist that the hours *must* be shortened, if the interests of children are to be genuinely promoted. Many ways of meeting the difficulty exist; for example, the younger children at each school should go to bed earlier and rise later; they should have no evening work to prepare and no lessons before breakfast; and their morning and afternoon hours of work could be shortened, without interfering with the studies of their elder and more advanced schoolfellows. Such arrangements would prove of incalculable value in the growth and gradual expansion of body and brain, and would consequently promote their future prospects in the world. If we face the difficulties of organisation resolutely, they will disappear.

The *preparation of work*, especially evening work, as at present arranged, is a serious hardship to most boys and girls at boarding, as well as day, schools. In fact, it is a common occurrence for them to fall asleep over these lessons, clearly showing nature's own revolt. For it constantly happens that some of the most difficult, and the newest, work is required to be prepared in the evening, when body and brain are tired, and when leisure for recuperation should be the only duty. Frequently, too, the task must be prepared without assistance, and the child becomes dazed. This work is often pursued until the very moment that the pupil retires to bed, so that sleep is deprived of its power of invigoration.

The preparation of work

It is a serious question to ask whether teachers should be *permitted* to force these long hours of work upon those whose physical and mental growth is as yet unfinished. Pupils are roused from sleep sometimes as early as 6.30 A.M., and are imprisoned at work, more or less, until bedtime—especially is this the case with girls, for whom games and recreation are even more necessary than they are for boys.

Teachers of day schools are not equally open to this charge, since they have not the opportunity of incurring it. I should, however, remind them of the large amount of home-work which is assigned to pupils for preparation alone in the evening. This is frequently the severest toil of the day. It is work that requires the guidance of the teacher; yet it has to be attempted without assistance, unless the parents provide a home tutor, and at a time when body and brain are fatigued.

Overwork in day schools

Moreover in day schools the work is often so arranged that no opportunity is provided for the recreation afforded by school games, because, in winter at all events, the hours of work are continued during the entire daylight. These unfortunate children—especially girls—may grow up without the benign influence of school sports, and develop, in consequence, a distinct and most objectionable precocity. By thus forbidding games during so many months of the year—girls, indeed, in a large number of schools scarcely know the meaning of an outdoor game at school—the taste for them languishes, and the vacations consequently tend to be spent in mere 'loafing,' with resulting loss to character and vigour. I advocate an 'Eight Hours Bill' for schools on a scale adjusted to the various ages, the full time being applicable only to the senior pupils. At present even the younger pupils are often kept at work for this period, which is again sometimes prolonged for the elder ones. Of course they do not actually and legitimately exert themselves for that number of hours, since, if this were possible, few would survive the ordeal unscathed; still they are chained under the restraint of work.

Notwithstanding this excessive amount of work, often assigned equally to junior and senior pupils, even when punishments are levied they too often assume the form of additional brain work, instead of physical *exercise*—such as physical drill—which might be substituted for *recreation and enjoyment.* This device would not deprive the delinquent of fresh air and exercise, imperative both for work and health.

Punishments

The period has, I think, arrived when the State should intervene, and insist that children at school, however renowned the school, should be worked by *scale* according to age; and that none should be compelled to labour beyond eight hours a day until the advent of maturity, unless with the express written permission of the teacher during a few days before examinations, in order to review past work alone.

Scale of work

I suggest the following scale as appropriate for the different ages at secondary schools :

TABLE OF SCALE OF WORK DURING SCHOOL LIFE

Ages			Hours of work per week
12 to 14	...	...	25
14 „ 15	...	...	30
15 „ 16	...	...	35
16 „ 17	...	...	40
17 „ 18	...	...	45
18 „ 19	...	...	50

No less important is the *arrangement of work*. Work should not commence too early, or be continued too late and thus interfere with sleep ; nor should it occupy the whole of the daylight, and thus preclude recreation. Moreover no growing child can devote attention of any value for three consecutive hours ; there must be frequent 'breaks.'

Arrangement of work

V.—*The Schoolroom*

The next subject for consideration is the place—the schoolroom—where the work is carried on, and, as the chief portion of the pupils' time is passed there during the day, the maintenance of their health largely depends upon the suitability of the rooms.

The schoolroom

I cannot stay to discuss the very important questions of aspect, situation, and the grounds in connexion with the amount of air and light, and space for play. But I must impress the fact that a sunny aspect is imperative if health is to be preserved, and the school kept free from saturation with infectious maladies, since sunlight and fresh air are fatal to the germs of disease—in fact, these elements not only prevent infectious diseases by rendering the propagation of the germs difficult, but where it has arisen they are most effectual disinfectants, for these disease microbes revel most in damp, dark places. The old adage,

Situation

Sunny aspect essential

Dove non va il sole, va il medico,

impresses this forcibly on the mind.

It is therefore essential that neighbouring buildings and trees

should not be in close proximity; and equally clear that no classroom should be wholly or partially underground.

A typical *size* for a classroom is one that will hold thirty pupils and their teacher, and this number is as many as one teacher can effectually instruct. Each pupil should be allowed a minimum of 400 cubic feet of air space; at present there are few schools which supply half that quantity, and in a large proportion of our schools in Great Britain the amount varies between 80 and 120 cubic feet. With this inadequate cubic space, a teacher informed me that so long as he remained in the schoolroom he could bear the insufficiency; but, if he were called out for a moment, he found the stench so intolerable on his return, that he was compelled to dismiss the pupils for the thorough ventilation of the room before he could resume his work.

Size: cubic space

But cubic space may be ample, and yet useless to the children. For instance, of what avail is it to provide even 1,000 cubic feet per head if the pupils are crowded together on the floor where the air is absolutely foul? A sufficient *floor space* therefore is essential, and height of room above a certain standard affords no benefit. The atmosphere is several miles in height, yet how easy it is for human beings to be so crowded on the earth as to cause an increased death-rate in proportion to the massing of the people: the height of the atmosphere is of little avail as regards purity of air beyond a few feet. The common expression on entering a schoolroom—'What a fine lofty room!' is usually of architectural significance only, while the vital element from the aspect of health is the horizontal space.

Superficial area

The committee of the Council of Education advise as minimum requirements that the height shall be 12 feet when the superficial area is 360 square feet: 13 feet when under 600 square feet: 14 feet when above this, and so on proportionately.

Height

A typical room, therefore, which would supply the requisite cubic space for thirty pupils and one master, would measure:

36 feet in length
25 feet in width
14 feet in height.

This gives 900 square feet of floor space, or 30 square feet per head.

In addition to this extent of space, it is essential that a continuous *ventilation* should be provided by means of Boyle's air-

pump ventilators or Tobin's ventilators or conical air-bricks; or Bird's system. And where open fireplaces are furnished, a large ventilator should be let into the chimney-breast, for the fire draws out the air from the upper part of the room if the ventilator be kept clean and free to act.

Ventilation

The *windows* may usually be opened, during occupation, on the lee side; they are, however, too frequently thoughtlessly opened on the windward side with injurious effects to the young. The schoolroom should also be vacated for a few minutes every hour, and the rooms flushed with air through wide-open windows and doors.

Windows

Draughts are mainly caused by the rush of incoming air through a small opening, or chink, and it is this form of ventilation which is so harmful to the young. All kinds of ventilation, again, should be beyond the reach of the pupils' manipulation.

The importance of appropriate schoolrooms can only be adequately measured by the vast amount of ill-health and disease which is caused by stuffy rooms, where the air is not only re-breathed, but is also saturated with emanations from bodies and clothes.

Artificial warmth for children is indispensable in cold weather, and should be provided according to the temperature of the atmosphere, and not by the date of the month. It is needful, on the other hand, that schoolrooms should not be overheated; since illness is apt to arise through want of additional outdoor clothing, where the difference between the internal and external temperature is considerable. The warming of schoolrooms should always combine warming with ventilation; but anything more iniquitous than the plan of 'lighting the gas' for the production of artificial warmth is difficult to imagine.

Warming

In the provision of *natural light* about 15 square feet of window area is required for every 1,000 cubic feet of room space. The windows should be placed above the line of the pupil's eye, and on the left side as the child sits at its desk, in order to avoid shadow, which is disastrous to the eyesight, and entails lounging over the desk. Of course every pupil should have a desk, and a seat with a back.

Lighting

It is to be hoped that the use of the electric light for *artificial light* in schools will soon become general.

It is a matter of supreme importance in the case of Day-schools that means should be furnished for changing and *drying the clothes and boots* of pupils who come

Drying clothes

from a distance, and thus avoiding the sitting through lessons in damp clothes.

The whole of the *sanitary arrangements* demand the keenest insight and precautions on the part of the headmaster, so that no flaw may escape detection. The *washing* appliances are apt to get out of order unless closely watched: a *clean towel* should be provided for each pupil. The *latrines*, the *water-closets*, and the *drainage* require constant scrutiny: the *flushing* should be automatic, and beyond the children's reach and control, or it will prove defective through mischief, ignorance, or forgetfulness.

Sanitary arrangements

VI.—*The Pupils' Residence*

In the case of Day-scholars who live at home, the school authorities possess no control, or responsibility in respect of residence. But with regard to pupils who occupy the school premises, or separate boarding-houses, an undivided responsibility exists.

Day-scholars and boarders

In boarding-houses provision is made for living, and preparing lessons out of school: for sleeping: for feeding; and other arrangements are required for sanitary purposes.

i. The *preparation of lessons* takes place either in a common-room where all study together; in studies where each works separately or with a companion; or in cubicles where the pupils work by day and sleep at night. All these arrangements require careful thought based upon the considerations I have adduced respecting schoolrooms generally, and upon the following suggestions relating to dormitories.

Studies

ii. The place for *sleep at school* should be for sleep only, and no pupil should be permitted to use the same room for work by day and sleep by night: this is essential for cleanliness and ventilation. Arrangements like cubicles where one and sometimes two pupils sleep should everywhere be discarded, and large open dormitories substituted.

Sleep and bedrooms

As a third, at least, of the day is spent in the sleeping-rooms, it is more important that they should be ampler than even class-rooms. Some teachers, and parents too, appear to imagine that any place is adapted for bedrooms, and yet the physical and moral well-being of the scholars largely depends upon a suitable provision in this respect.

Bedrooms should have a sunny aspect, even though they be not

occupied while the sun shines upon them; for sunshine destroys the organic emanations proceeding from the body.

Each pupil should be provided with 800 cubic feet of breathing space, with efficient ventilation besides.

There are many reasons why a large superficial area is of vaster importance here than in classrooms. If we take a school bed to measure 3 × 6 feet, the superficial area should be four times that dimension, or 6 × 12 feet, and the room 12 feet high, which provides 864 cubic feet per head, and allows for the air displaced by the furniture of the room and the body of the pupil, and provides a full complement of 800 cubic feet. These dormitories should contain from ten to sixteen beds. The windows should equal in total extent at least one-tenth of the floor area, and they should reach almost to the ceiling. They should be fully open by day, and closed before sunset in winter.

The ventilation, the washing appliances, the sanitary arrangements for the night, the baths, and all drain connexions, are matters of vast importance, but cannot be here discussed.

Some form of artificial light should be burning all night for the prevention of panic in the event of fire; for convenience in case of illness; and for the prevention and detection of disorder.

I lay special stress upon the hours allotted for sleep, since this consideration is seriously neglected in all schools. No vegetable or animal tissue can perform its functions without rest.

Amount of sleep

The heart itself, frequently instanced as an example of continual action from birth to death, enjoys a period of rest after every beat, equal in length to the duration of its two contractions, and amounting daily to twelve hours. Growing tissues require quiescence for replacing the result of wear and tear; and an extra supply in order to provide for growth and development. It is a well-established fact that more sleep is required for the formative than for the intellectual functional activity of the nerve centres. Teachers must realise the fact that stinted sleep means stunted body and brain, with the sequel of ill-health, or deficiency of vigour, and lowered vitality.

It seems scarcely credible that the doctrine should require enforcement at the present day, that juniors at school require more sleep than their seniors, and that a reasonable adjustment should be effected in relation to age. The same mischief occurs here as in the allotment of a uniform amount of work. Insufficient sleep for growing children practically amounts to overwork.

Girls especially suffer from this neglect during their early

progress into womanhood, when they are growing rapidly, developing in their proportions, and establishing new functions.

Teachers should not only permit, but vigilantly enforce this adequate time for sleep, by prohibiting sitting up at night after hours, or rising early for completion of tasks at the expense of sleep; the work itself should rather be diminished in extent.

THE AMOUNT OF SLEEP REQUIRED DURING SCHOOL LIFE

Age				Hours of sleep
Under the age of 13	..	...		10½ hours
" " 15	...	...		10 "
" " 17	...	...		9½ "
" " 19	...	...		9 "

During cold weather, at the advent of puberty, and when the body is undergoing rapid growth, a still greater amount of sleep is necessary, since it is impossible for healthy brain tissue to be formed, if rest adequate for growth, development, and repair be not provided.

Sanitation and water supply

iii. The *Sanitary arrangements* in connexion with the school residence comprise some of the most important details which affect the welfare of individual pupils, and of the school generally. For, if these are imperfect, ill-health, disease, and death are certain to arise. These items, however, are so numerous that I can only indicate the elements they include, and leave my readers to search other works for descriptions of the necessary details in their practical execution.

They include the *water supply*, its source, service, and the provision of Pasteur filters: the *drainage*, inside and outside, together with cesspools, water-closets, and latrines: the *lavatories*, baths, and towels: the *removal of house-refuse*: the system of *airing linen* and of *drying wet clothes and boots*: the *dressing-room* for changing clothes before and after games: the *day and night sick rooms*; and the *methods of airing* and warming working, dining, and sleeping rooms and beds before the re-assembling of the school after vacations—whether the method be that of artificial heating, or utilising the pupils' bodies, which, by abstraction of heat, means for them enfeebled health, even if chill and subsequent acute illness do not supervene.

Food

iv. *Food.*—The feeding of the young during school-life is a matter that deeply concerns the teacher, not only as regards the welfare of the child, but also in relation to the existence and popularity of the school itself.

The teacher will naturally ask, What is the appropriate feeding of the young? Here, again, I can only suggest rather than recount all the important details.

The essential fact to remember is that the teacher has not merely to provide for existence, but equally for growth and development; hence the reason why the young eat more than the adult, since food in the latter case is not so much required to serve the double function.

It is said that there are still foolish people who think that a large appetite is unladylike: whereas there is nothing more necessary for a girl than the provision of ample materials for complete development. And during the two years in which the growth of girls is so prominent, it is positively cruel to stint them in any way; the utmost appropriate food during that period is a dictate of nature.

The feeding of girls

Without nourishment, appropriate in quantity and quality, bodily vigour is impossible; resistance to infectious disease is enfeebled; internal maladies arise; or less specific general physical and mental deterioration is induced.

The results of inappropriate feeding

The whole of the school food should be supplied by the school authorities: none should be provided from home or from the pastry-cook at the parents' expense; for in this way the child of the wealthy parent obtains the better nourishment, whereas it is the duty of the school to provide a sufficient diet for all. Sometimes the diet of youth is so closely adjusted to its cost, that illness is barely averted, while growth is frustrated, and a bar placed upon natural development.

School should provide all food, and in sufficient variety

Variety of food is essential for efficient digestion and liveliness of disposition; monotony of diet seems to produce monotony of character, probably by means of defective nutrition.

The periodical use of the scales and measure, to which I have already referred, would indicate whether the child is receiving his proper supply. In estimating the significance of the measure and scales, it must be remembered that children grow by fits and starts; rapid growth demands constant care, ample food, much rest, and reduced work; while on the occurrence of loss of weight, work should usually cease altogether.

Scales and measure

In some schools such a record is already kept, and has proved of the greatest assistance to the teacher. On the other hand, it is inconceivable that any true school masters and mistresses would

resent the introduction of the system, by reason of its revelation of the unsuitability and inadequacy of many of the present methods of education and treatment, involving, if its indications were heeded, considerable thought and modification in the administration.

If the plan were instituted in a certain number of girls' schools, an entire reorganisation must take place in consequence of the disclosure of absolutely abnormal conditions. Though I cheerfully acknowledge that girls' schools are on the move, owing to some pioneers who are making praiseworthy efforts—often under disheartening circumstances owing to the callousness of parents and the public—to insure the physical culture of the body as well as of the mind.

No work should be imposed upon boys or girls without previous sustenance. 'Food first, work afterwards,' should be the invariable law. Work before eating implies that the material necessary for the performance of work must be absorbed at the expense of the system, and to the hindrance of bodily growth.

Food before work

The *meals*, therefore, should be wisely arranged: a substantial meat meal should be provided for breakfast and dinner, so that the heavy meals may be consumed before the principal morning and afternoon tasks commence, lighter meals being taken in the after part of the day when the more arduous work, and play, are ended.

Meals, cooking, and serving

The *cooking* of food for the young has scarcely yet received the attention it deserves and requires. This neglect, and the supplementary 'stuffings' at the pastry-cooks, or hampers, to replace unpalatable food, form a fertile source of feeble health, lethargic work, bad temper, and permanent damage to the digestive organs.

The caterer should also see that the meals are *served hot*: the younger pupils supplied first: the carving nicely done; and that the plates, knives, forks, and table cloths are clean, as well as the hands of the waiters.

Sufficient time, again, is rarely allowed at school for efficient mastication. I would especially point out the necessity of children being taught to use their teeth for this purpose, rather than be allowed the too frequent aid of the knife, or provided with foods that require no mastication; in this way only will the teeth be kept serviceable.

If a pupil abstain, for any reason, from eating a meal or meals, the fact should be reported to the caterer, careful inquiry made

into the cause, the omission repaired, and the performance of his usual tasks meantime must not be expected, unless, of course, he has regaled himself elsewhere.

It is during the years of growth that the delicate child may overcome its feebleness and be made permanently strong; or the strong child be weakened and stunted by injudicious treatment.

Concerning the suitable kinds of food for youth, I would advise that *meat* should be provided twice a day, at breakfast and at mid-day dinner. Where this is not feasible, on the score of expense, *porridge* for breakfast forms a cheap substitute, and *cheese* may be used as an equivalent. The crust of *bread* is more digestible than the crumb, and is excellent for the teeth, and whole-meal is of more service than white bread, when it is properly and palatably made.

Materials

Sugar, so frequently denied, is an indispensable requirement to the young, forming, as it does, the main heat-forming food, as well as the most important factor in the growth and action of muscles.

It should be borne in mind that the young grow at twice the rate on *milk* that they do on tea or coffee.

Vegetables or *fruit* are imperative as an article of diet, and their consumption should be encouraged in every possible way. Without them various kinds of ill-health arise.

Salt, too, is a necessity, rather than a luxury, and the teacher should impress the fact upon the pupil's mind.

Alcohol in all forms is not only unnecessary, but the young are always better without it. I cannot inveigh too forcibly concerning its use at supper time.

It should be impossible for sour bread or milk, rank butter, or tainted meat and fish to be supplied to children at school.

The process of Life is a form of combustion with the usual 'waste,' the result of wear and tear, which must be removed from the body by certain excretory organs. These effects of combustion must be regularly excreted if health is to be maintained; or otherwise putrefactive products are formed, which poison the system by absorption. The need of the daily removal of this refuse from the bowels is not yet sufficiently *taught* in schools—and here, again, girls are the greatest sufferers from their lack of outdoor games—and in consequence much unnecessary ill-health and suffering ensue. It therefore behoves the teacher to recognise it as one of his most important duties, by providing adequate *time* AFTER BREAKFAST, a sufficient *number* of latrines to

Waste

prevent hurry, and to ascertain that there is nothing to prevent the observance of this health-giving rule. Yet I know of schools where the pupils leave the breakfast-table direct for the schoolroom, the pupils obtaining their relief when and how they can, which means, frequently, not at all.

VII.—*The Culture of the Body*

I cannot sufficiently emphasise the fact that physical culture should mean *recreation*, and not simply exercise: involving, as recreation does, not only physical culture but also mental refreshment. Exercise, apart from recreation, loses half its value to the young, especially to girls, who require lively, spirited, but not prolonged exercise.

Recreation versus exercise

But, for all, exercise during youth is excellent; while games are imperative. We, as a nation, owe our success chiefly to our mental and bodily vigour—a vigour which is irrepressible, and dependent mainly upon the games of boyhood, which render possible our sports of manhood.

The physical culture of the young trains them in perception and judgment, as well as in adroitness and courage. Even yet, the influence of physical culture on mental and moral growth is not sufficiently regarded—witness our day schools, for instance—nor is it always recognised, even by the best teachers, that, for the completest development, mental and bodily culture must be concurrent, and must form one of the most important responsibilities of the teacher himself.

The influence of physical culture on the young

The teacher appears to me often forgetful that no question in the training of the young is of greater moment than the mode in which the pupil occupies his hours out of school. If this freedom from work were made a period of cheerful recreation and constant lively occupation, weariness, idle lounging, and bullying, with their deterioration of tone and character, would disappear.

In suitable physical exercise all the functions of the body are engaged. The circulation of the blood is quickened, more oxygen is inhaled, and the impurities of the blood are thereby oxygenated and destroyed, and the excretory organs of the body can thus effectively remove the detritus from the system. And, in addition, as I have insisted, the formation of character is promoted.

To deal more with detail: observe the young boy who is keen in games, and compare his physical condition with that of him who

does not take adequate exercise. Notice his healthy complexion, good wind, elastic gait, splendid muscles, increased stature, fine physique, and sure development into vigorous manhood.

Games

But this is only one side of the picture, for the results are far wider. Consider how boys' games tend to develop a well-balanced mind and character: how they instil into his nature, as nothing else can, glowing spirits, from the robustness of his health: quick response to the call of duty, instead of lethargic habits: good temper, often under trying circumstances: love of justice and fair-play which lasts with life: self-reliance: endurance: confidence in comrades: desire to excel, which ultimately becomes a noble ambition: quick judgment: aptness to act with others for the good of all, and not from selfishness: courage under difficulties: self-control; and last, but not least, the check on morbid desires and sensations, by the adequate expenditure of superfluous energy, which insures purity of life. In short these games produce true manliness of character, with a just ambition to excel in every phase of the battle of life.

If school games had no other salutary influence than that of affording a wholesome topic of conversation out of school hours they would be well worth the infinite trouble which should be bestowed.

In the regulation of games for the young, where healthy rivalry may, in the inexperienced, lead to excessive competition, I think the physician should have a voice. I would therefore suggest the following precautions, which are reasonable, without the unnecessary fuss which pupil and teacher resent.

The physical examination of the pupil

1. The physical examination of all children when they first enter a school. In this way only can the healthy be safely compelled to play, and for this each one should be sized.

2. The proper apportionment of exercise subsequent to this examination, in order that the physically weak, diseased, or deformed may take that exercise which is individually suitable. In this way only should the unfit be excused from the ordinary school games.

3. The medical control of all severe exercise, so that the pupil who is physically able to undertake the exercise shall not be permitted to do so without prior and suitable training for the prolonged exertion.

It is these cases which in my experience produce the greatest

harm, and bring games into opprobrium. Boys who think that, because they have won a race by rowing or running in one season, they can do the same in the next without fresh training are sure to overstrain and injure themselves.

It is excess of exercise, or exercise imprudently taken, which is deleterious to those who are growing : exercise in proper measure simply promotes health and strength. It must be gradual in its increase if harmful results are to be avoided.

Physical education requires as much forethought, method, and application as mental training, whereas too much routine is involved in both.

For all games entailing exertion the player should be clothed in flannel, which should be changed immediately afterwards and dried ; where this care is not observed, chills and even dangerous illness are apt to arise.

Change of work and change of play are as important as variety in diet. At the present time the games of the young are often too monotonous, and insufficient attention is paid to natural tastes and aversions. The exercise obtainable from games, as well as from hand-culture, should be various, not only for the better development of bones and muscles, but also for the expansion of the brain itself, since every complex movement has its brain-centre, which, in its turn, is developed by the exercise of its functions.

Games should be varied according to age, size, constitution, and sex. The games and exercises suitable for boys comprise :— Football : Cricket : Gymnastics : Physical Drill : Running : Brook jumping : High jumping : Skipping : Rowing : Swimming : Skating : Racquets : Fives : Lawn Tennis : La Crosse : Golf : Hockey : Baseball : Wrestling : Fencing : Boxing : Cycling : Rifle corps : Rifle shooting : Camping out : Workshops : Natural History excursions : Gardening : Music.

But what is the lot of girls at many a private school in regard to physical culture? A treadmill walk, two and two, for an hour, and most frequently on a pavement. It is true that an emancipation of girls has taken place of late years, and witness the result, in their better development and increased height, by means of Tennis, Golf, and Cycling. But this exercise comes too late for complete effect. Its place, for securing the most beneficial return, should exist during the School Age, while the body is growing in the most vigorous mode.

Girls' games

I do not despair, seeing that 'Founders' of girls' schools having large playing grounds, and schoolmistresses eager to organise games,

are rising about us ; and at this happy stage boys will need to see that their sisters do not excel them in development.

At the present time it is not all girls' schools which have playgrounds at all, and even where these exist, games for all are most imperfectly organised : whereas they should be as thoroughly arranged as are the lessons.

Girls, in this respect, have been neglected, and far too little attention is devoted to bodily development.[1] The reason of the frequent breakdown of health in girls directly they attempt hard mental work, of incapacitation for life in many cases, of physical wreckage, and of servitude to hysteria and other neuroses, lies not in natural poorness of physique, but in the fact that the impossible is attempted at school regardless of physical culture. If the higher mental education of girls, of which they are quite capable without injury when judiciously treated, is to be secured, they must not be pressed, as at present, during the years in which their growth and development are enormous—from ages eleven to fourteen—when they leap, as it were, from childhood to womanhood at a bound, for all their nervous force is expended in this direction.

Moreover, schoolmistresses must not fail to recognise the difference of constitution between the boy and girl. Continual application to work from day to day, from week to week, and from month to month should never be enforced on girls : nor should they be *allowed* to make these efforts : periodical cessation and rest should be both encouraged and enforced.

Above all, their mental education MUST proceed *pari passu* with a thorough physical education, or, with rare exceptions, it must end in failure, perhaps in serious and permanent misery. If at the present time this course cannot be managed, let their mental education remain stationary, and the physical training be undertaken more completely, so that, by degrees, they may be prepared for the higher intellectual education, and become better adapted for their duties as women.

1 There has been, perhaps, a more remarkable change of sentiment in the points here mentioned than Dr. Dukes is aware, a change due, no doubt, to the very assiduous preaching of those who, like himself, have taken the question of school hygiene seriously. Most large girls' schools have indeed their playgrounds, their clubs, and their games. The smaller schools, and too many of the 'private' schools, in which the prim tradition dies hard, make less adequate provision. The question of the proper proportionment of work has not yet been satisfactorily tackled. Time Tables tend too often to great diffuseness, an excessive number of 'subjects,' and consequent overwork.—P.A.B.

The education of girls should not be carried out at the expense of motherhood: we do not want crammed heads, but strong well-made bodies fit for what nature requires. Teachers should see that education consists in training the girl for the beneficent occupation of a 'Home-maker' whose happy influence and power perpetually extend.

The education of the girl for a 'home-maker'

Girls are naturally more subject than boys to nervous excitement, but this could be more effectually restrained by a sounder physical culture.

The absence of daily, regular, and sufficient exercise renders girls listless and apathetic: entails pallor of countenance: constipation with its sallowness, foul breath, and depressed spirits: crooked and stooping backs: knock-knee and flat-foot with characteristically awkward gait.

It should be the aim of parents and teachers to instil into girls' minds the duty of being physically strong, of developing more muscles and less nerves; and to provide for the attainment of these ends by adequate means. They should be taught the necessity of being vigorous as well as graceful, of possessing natural instead of artificial shapeliness. But they must understand that this perfection of body can only be reached during the period of youth, and by physical culture, which, duly regulated, promotes both muscular development and vigorous nervous tissue and brain capacity. Above all, they should be taught that strength of character curbs irregular nervous expenditure. If girls, I repeat, are to receive a higher culture with safety, their physical education must precede any increase in their mental education. Without this precaution the process cannot be safely effected, for the mental powers are developed in woman at a higher physiological cost, which her feminine organisation will not sustain without more or less profound injury if bodily vigour be not concurrently maintained.

Girls should aim at being physically strong

It is more essential for a nation to produce vigorous offspring than to educate girls to the highest standard. By the highest physical culture girls can be rendered strong, comely, and well-proportioned; while by the highest mental education (without this physical basis) they may be converted into 'blue stockings,' or neurotics, or both together.

By physical education I mean games and recreation which cheer and elate, not merely gymnastics and physical drill, which afford exercise without enjoyment. These latter exercises are

mainly for the sickly and deformed, and curative rather than animating. By physical exercise, too, I mean exercise out-of-doors, and without this condition at least half of its value is lost.

In order to carry out the requisite physical culture of girls, I would categorically insist :—

Necessities for girls' games

1. That in girls' schools, day and boarding, a playground should be provided. There was a time when even the suggestion of this would have created a laugh and a sneer in some quarters, and deep concern in others, for the greater proportion of girls' schools had literally no place of any description provided for play.

2. That the necessary time should be set apart for play. That no girl should ever be longer in school than an hour without a 'break,' so that she may stretch her rapidly growing limbs, use her lungs fully, and have a mental rest, and then a change of subject, the schoolroom meanwhile being freely ventilated.

3. That a suitable flannel dress should be worn to enable the limbs and ribs to move without restraint. This dress should be put on just before playing, and taken off after the active game has ceased.

4. That, above all, appropriate exercise and games should be organised, and varied as much as possible, in order that the whole frame may be developed in due proportion, never forgetting the character of the female constitution.

It may be asked, 'What appropriate muscular exercise exists for girls?' Up to the age of puberty the same exercise should be common to both sexes; while after that age the games of girls should gradually merge into exercise of a quieter character.

Games suitable for girls

Such exercises as *walking*, *running*, *skipping*, *swinging*, and *jumping* are capital; but walking should be in the country, with perfect liberty of pace and choice of friends, and should never be enforced as a regulation march. *Dancing* is a splendid exercise when performed at appropriate hours and in appropriate rooms, and tends to produce the grace of movement which is essential to a woman's education. This is an excellent pastime for wet days. *Gymnastics*, such as light dumb-bells, parallel bars, the trapeze rings, horizontal bar and ladder exercise, may be safely used and with the greatest benefit. These exercises are a great resource, too, on wet days. *Drilling*, and especially the military *physical drill*, with music, is very useful in producing an upright carriage. There is no better or more suitable exercise than *riding*. *Swimming* is cleanly, and would

remove the tendency to 'nerves' more than anything else: it is useful, besides, to others, as well as to the agent herself. *Skating* is invigorating and health-giving, and comes at a time when there is more or less a deficiency of means of outdoor exercise. *Rowing* provides one of the best of all exercises for girls. It would soon banish the 'back-board' from schools, for the muscles of the back would become so strengthened that weak backs would be straightened, and the curved spine and outgrowing shoulder-blade would become morbid conditions of the past. The exercise also develops the chest and the abdominal muscles, together with the arms and legs. It should not be allowed, however, unless the girl has previously taken the trouble to learn to swim. *Cricket* forms a delightful exercise for girls: *lawn tennis*, *racquets*, *fives*, *la crosse*, *golf*, *hockey*, *ringoal*, *croquet*, *baseball*, and *battledore and shuttlecock* also. And if girls were encouraged to measure, mark, roll, and mow their tennis lawns, it would not only provide a diversity of exercise and occupation, but would at the same time enforce the excellent lesson of acting for themselves, instead of being helplessly dependent upon others. *Cycling* is also of untold value. *Gardening* would suit many a girl incapable of more active exercise, and causes infinite pleasure and interest. *Natural history excursions*, *music*, *art*, and *drawing*, all have their place.

Were such exercises faithfully carried out, girls would not require special 'lessons in deportment,' for, the muscles being rendered strong and elastic, grace and ease in their carriage would naturally result.

By these means the female figure would be improved, and its strength in staying power enhanced, together with larger mental vigour; increased power of application and quickness, greater brightness in disposition, and strength of character would naturally follow.

Every educator of girls should feel disgraced by the lounging attitudes and awkward gaits which prevail at so many girls' schools, with their lop-sided and crooked backs; for in these traits is manifest the vicious system, or absence of system, of existing education.

While I hold that, subject to the restrictions I have laid down, girls may safely receive a higher education than has hitherto been accorded, I would urge that their moral education is of more consequence to themselves and the nation than their purely intellectual development. With a physical culture which is their due, we should, almost in a generation,

Girls' moral education

eradicate the neuroses and anæmia which so largely prevail. In their place we should perceive more serene spirits and more stability of character; the aping of men would disappear in a more dignified respect for the qualities of their own sex.

I have expressed myself strongly on the physical culture of girls, because I feel that they are gravely neglected. The life of a boy at school is paradise compared with the lot of some girls, whose day is almost exclusively lost in lessons!

The exercise suitable for *wet days*, and for pupils who are *physically weak* from illness, or who have *overgrown* their strength, are questions which, at present, are neglected.

And, in conclusion, I must press the fact home once more that in all schools it is invariably the younger who wrongfully endure the hardest and roughest time. For these I earnestly plead: *underfed*, because they are served last, and frequently thus deprived of sufficient time for obtaining a second helping: *overworked*, because the same number of hours of work are prescribed as are demanded of the elders: having *insufficient sleep*, because a uniform measure is indiscriminately meted out: allowed *inadequate* exercise, because the space monopolised by the elder pupils leaves no vacant room: in short, at school, of all places in the world, where the mischievous practice should never even in its lightest form intrude, it is the old story of the strong against the weak.

The elder and stronger obtain the best supply of food; the plan of work and sleep is arranged mainly for the seniors; and the exercise is based upon the same inequitable rule.

School is a place in which to prepare the young, not to unfit them, for their duties as men and women; and it is the teacher's beneficent work to attain this end in its most competent form.

Works for consultation: *School Life in its Influence on Sight and Figure*, Liebreich; *Dwelling Houses*, Corfield; *Our Homes*, Murphy; *Manual of Diet*, Chambers; *School Diet*, Dukes; *Health at School*, Dukes; *Practical Hygiene*, Parkes; *Hygiene*, Notter; *Hygiene*, Wilson; *Healthy Schools*, C. Paget; *Book of Health*, Morris; *School Hygiene*, Farquharson; *School Hygiene*, Newsholme; *School Hygiene*, Roth.

CLEMENT DUKES, M.D. LOND.

FURNITURE, APPARATUS, AND APPLIANCES

I. *General Principles*

WHILE it is true that a bad workman blames his tools, it is certain that the best work can only be accomplished with the best tools. Fine teaching can be done with little furniture, and very bad instruction be given with a wealth of appliances. Yet sufficient furniture, good apparatus, and useful appliances in the hands of a first-class teacher must produce results which cannot be obtained under any other circumstances. We must therefore beware of supposing that educational aids are either absolutely necessary or entirely useless.

A judicious attitude towards educational aids

The custom and caprice of individual makers produce an infinite variety of shape; but the objects aimed at are few and simple, throwing the products into well-defined groups upon a basis of typical forms. The utilitarian principles underlying their structure fall also into simple categories and may be grouped under two heads—(1) those governing arrangement and (2) those which modify structure.

Classification of types and principles

By arrangement I mean the distribution of furniture, apparatus, and appliances generally in the school and particularly in the classroom. Structure includes the build of educational aids and the mechanical devices peculiar to each. Furniture means roughly all those *fixtures* of which the desk is the most important. Apparatus includes those movable *vehicles* of communication between teacher and pupil, of which the blackboard is the commonest specimen. By appliances I understand rather those *instruments* of education which have some ingenious contrivance for facilitating graphic representation, as the orrery; or overcoming intellectual and mechanical difficulties, as the abacus and compasses. But the three last categories run much into one another.

Definitions

Whatever the educational aid in question, its location in the classroom is governed by three necessities—good light, easy access, adaptability.

1. Arrangement

It must be placed in such a position that it will be well lighted in the portion to be seen by the pupil. In desks the light should, as far as possible, come over the left shoulder of the pupil. The light rays should not fall on a blackboard, map, or diagram, at such an angle as to be reflected into the pupil's eye. Models should be lighted from one direction only and not placed where cross lights, producing mingled shadows, confuse the form. If the general rule, that the best light must be found, is obeyed, a little thought will show the best position obtainable under the circumstances.

(i) Good light

Next we have to bear in mind that any piece of furniture or apparatus will lose half its value if it cannot be easily approached from any necessary direction. Desks must be so built and placed that any pupil can both quickly enter and quickly leave his seat without causing any other pupil to move, or making any noise likely to distract the class or the teacher. The latter on his part must be able to get all round each pupil without disturbing the others, in order that he may inspect the work of one pupil at a time. These conditions at once mark out the single desk as the ideal in that class of furniture. It is further necessary that the teacher, even while sitting, should be able to command easily a full view of the desk slope and hands of every pupil in the room. The teacher's seat should therefore be raised upon a platform at least a foot above the floor and set a few feet from the middle of the diameter of a semicircle, or one side of a rectangle, within which the desks are disposed. The semicircle gives the best control: the rectangle is the most economical in space. It should be a square. Otherwise, if the teacher is at the middle of one of the short sides of the rectangle, he must strain his eyes to watch the desks farthest in front of him, and, if he is in the middle of one of the long sides, he cannot control the pupils on his extreme right and left without constantly turning his head through a painfully wide angle. Diagram A shows the ideal arrangement, which, however, wastes some room, and diagram B the most generally practicable one. Whether long, dual, or single desks be used, the compactness of the square should be approached as nearly as possible. Blackboards and

(ii) Easy access

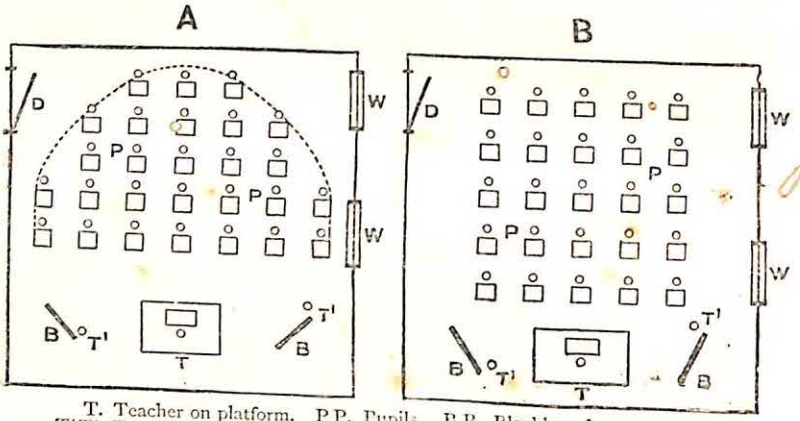
(*a*) For pupil's entrance and exit

(*b*) For teacher's approach and supervision

Short length (and long depth) system

Long length (and short depth) system

maps should always be placed to the right and left of the teacher at an angle of 45° with the front row of pupils, so that, standing at the left side and writing or demonstrating with his right hand, the teacher may with the tail of one eye at least partially command most of the pupils. Generally the teacher should not have to turn his eyes more than 45° either way to command the outside sitters. Owing to the importance of visual control, box desks and desks with reading flaps are objectionable. Both afford cover for illicit playing. For the same reason, if the desk has any bookshelf, it should be an open one in full view of the teacher. Cupboards &c. should stand where the teacher can approach them without completely turning his back on the class. Lockers should be outside the classroom, ranged along the blank sides of entrance



T. Teacher on platform. P P. Pupils. B B. Blackboards or maps.
T'T'. Teacher when writing on blackboards. D. Door. W W. Windows.

halls and lobbies, so that forgetful pupils may reach them at any time in school hours without disturbing other classes. In scientific demonstration the above conditions are reversed. It is now the pupil who must see the hands of the teacher and the objects he is manipulating. The desks should therefore rise in tiers from the level of the teacher's table. But the slope should not be great because of the discomfort of directing the voice upwards while demonstrating on a table.

Flat and graduated systems

We come lastly to the question of adaptability. An educational aid is useful only in proportion to its adaptation to the purpose for which it is used. Desks are meant to facilitate reading and writing without interfering with health or movement. Hence they must be adaptable to pupils of

(iii) Adaptability

varying size, strength, and age. This at once rules out fixed desks which, if comfortable for sitting, are uncomfortable for standing (or *vice versâ*) and will fit properly only one size of pupil, as also backless benches, which foster physical deformity and, by causing bodily discomfort, take off the edge of mental appetite. Lockers that cannot be locked are a snare and a delusion. Only by giving each pupil a receptacle to which no key but his own will give access can we fix upon him the responsibility for lost books or protect him from illicit borrowing.

I pass now to the principles modifying structure—usefulness, strength, mobility, appearance, and hygienic fitness.

2. Structure

A desk which is good only for writing, which cannot be adapted for reading and will not allow the pupil to stand erect, is unfit for a well-appointed school. So is a fireguard which any little boy can pull aside, an easel which is readily overbalanced, or an ink-well filler that is always clogged.

(i) Usefulness

In the matter of strength, all kinds of educational furniture should be able to resist not only the natural wear and tear of normal operations, but also the irregular strains caused by dragging them about when the room has to be rearranged for special purposes. Castors should be attached whenever practicable. Telescopic adjustments are always weak under such trials. Sliding cupboard doors have a tendency, when shot home, to dislocate the mitres by the jar of their weight against the side of the opening. Swing doors are to be preferred. Loose blackboards should be clamped at the joints to bear the strain of an occasional fall, and maps should be thickly varnished. An accidental splash of ink can then be washed off easily. Relief maps should be glazed, lest the valleys be filled with dust.

(ii) Strength

Rearrangement is often necessary and sometimes desirable merely to give a fresh aspect to a too familiar room. Small size and light weight should therefore be studied in the larger pieces of school furniture. Single desks and folding tables have here a great advantage; but it is difficult to attain steadiness when the weight is reduced beyond a certain point. Cabinets, stands, framed blackboards, and portable lavatories should always ride on castors. Diagrams should be suspended on hooks, and notice-boards eyeleted on staples which can be padlocked. Easels, if not on castors, should always fold up.

(iii) Mobility

In appearance, elegance of form should be carefully studied, because the furniture of the schoolroom is a constant and important factor in the influences which cultivate taste in the growing

mind. With desks and stands it will generally be found that strength cannot be obtained in woodwork without loss of elegance, and in ironwork without loss of lightness. A judicious combination of wood and iron yields the most pleasing and practical result. In colouring, the darker wood stains offer most resistance to grease and dirt, but the natural polish of pitch pine combines lightness with a rich depth which is increased by age. Dark green is a handsome colour for ironwork, and chocolate gives an impression of warmth. Both are serviceable and lasting.

(iv) Appearance

Hygiene in furniture is mostly concerned with the build of desks and seats. The many fanciful considerations connected with this matter have but one object—to obtain for the pupil when seated the maximum of comfort with the minimum of luxury. Superfluous ease produces sleepiness. Unnecessary discomfort causes fatigue and consequent sluggishness of mental movement and, in extreme cases, physical deformity. Some of the blame laid at the door of the unsanitary desk must be shared by the fashion of slanting writing, that *damnosa hereditas* of the Italian Renaissance. The difficulties are mainly four—to secure a suitable distance (*a*) between the pupil's body and the edge of the writing slope, and (*b*) between the lower edge of this slope and the top of the seat, to which must be added in a subordinate sense, (*c*) the need of some rest for the feet to discourage distortion of the spinal column by crossing the legs or curling them under the seat, and (*d*) the difficulty of securing this for an infinite number of pupils of varying height and girth. The slope should be fixed at an angle to make reading comfortable for the eyes. All desks, except the fixed ones, provide for this. As a desk is now to be had which will adapt itself to all the above adjustments, it is only necessary to set each pupil permanently at one such desk and all the difficulties may be overcome by turning a few screws. In less favourable circumstances the following measurements will serve as a guide.

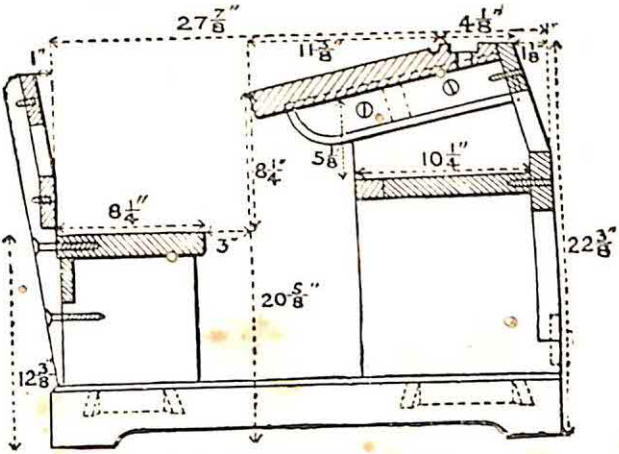
(v) Hygiene

The governing conditions are these—the pupil must sit with body vertical for writing, and be able to lean back for reading with no lateral curvature of the spine in either case. He must not stoop or lounge or sit in any way askew, and the book or paper must rest at a comfortable distance below his eyes.

Generally the height of the seat should equal the length of the pupil's leg from knee to sole of foot. The breadth should be one-fifth the length of the pupil's body, and the seat should slope slightly backwards. The height of the desk should be such as to

allow the under part of the arm to rest comfortably on the writing slope, and this will give the best distance from the eye to the book.[1]

The following table of measurements is abridged from Robson's adaptation of the table constructed by Herr Weyer of Cologne,[2] the method of measurement being shown by the diagram. The figures on the diagram will be found in Column I. of the Table, and all measurements are in inches.



The Cologne School Desk. No. 4

MEASUREMENTS IN INCHES

—	Number of Class (Division)	I.	II.	III.	IV.	V.	VI.	VII.
a	Age of pupil in years	5-6	7-8	9-10	11-12	13-14	15-16	17-18
b	Average height of same in inches	43	47½	51½	55½	59½	64	68
c	Height of seat board	12⅜	13½	14⅝	15¾	16⅝	18	19
d	Width of seat board	8¼	8¾	9¼	9¾	10¼	10¾	11⅜
e	Height from top of seat to front edge of desk	8¼	9	9⅝	10¼	11	11⅝	12⅜
f	Height from floor to back edge of desk	22⅜	24⅛	26	27⅞	29⅝	31⅝	33⅜
g	Distance between edge of desk and seat (measured in projection)	3	3¼	3⅜	3½	3¾	4	4⅛
h	Width top of desk (horizontal part)	4⅛	4⅛	4⅛	4⅛	4⅛	4⅛	4⅛
i	Width of top of desk (inclined part)	11⅜	11⅜	12⅜	12⅜	13⅜	13⅜	13⅞
k	Depth of bookshelf	10¼	10¼	10¼	10¼	10¼	10¼	10¼
l	Distance of same from top of desk	5⅛	5⅛	5⅛	5⅛	5⅛	5⅛	5⅛
m	Slope of back of seat	1	1	1	1	1	1	1
n	Width of seat	17½	18½	19⅜	20⅜	21⅝	22⅜	23⅜

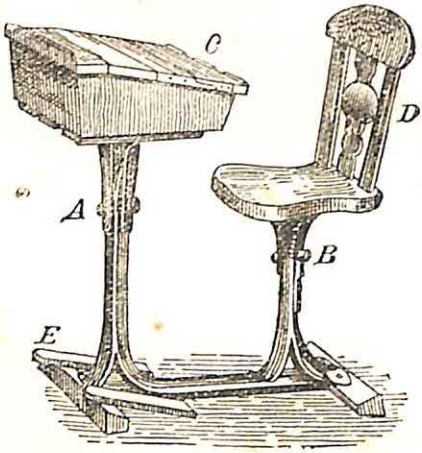
[1] Robson, *School Architecture*, 2nd edit. chap. xviii. p. 362. [2] *Ibid.* p. 365.

Having stated the principles underlying the structure and arrangement of educational aids, I will now describe them in detail.

II. *Furniture, Apparatus, and Appliances*

A glance through the catalogues of the chief dealers in school furniture reveals an infinite variety of 'make' in desks, but there are in reality only three types—the single (meant for one), the dual (for two), and the long (for from three to seven pupils). The last has no recommendation but the saving of space, which is the sole recommendation of the dual when com-

1. Desks



The Glendenning Adjustable Desk

By applying a key to A and B the desk and seat may be raised or lowered to the desired height.

The desk top slides horizontally.

The writing slope is at an angle of 15°, and the front part can be thrown up as a reading slope of 40° (C).

The chair has Dr. Roth's adjustable spine pad (D), and there is a foot-rest (E).

pared with the single desk. This, on the other hand, has the inestimable advantage of isolating each pupil from his neighbours. Whispering is at the root of class discipline troubles, and it is hard to check this when even two pupils sit together, as in the dual system. But the isolation of the single desk compels a slight raising of the voice that invites detection. Hence the single desk fosters a stillness in the classroom which, by its strengthening of attention and consequently of retention, has such a deep and widespread influence on the result of the school's intellectual activity that no gain in space can be set against it.

The illustration shows an ideal single desk, the 'Glendenning,' which allows of all necessary adjustments to fit any pupil. In the 'Swedish' and other desks the seat is sometimes hinged to facilitate standing, while in the American primary schools, being chair-shaped, it is more comfortable for the back. The 'Stanton,' 'George Green,' 'Owen,' and 'Louise' allow the slope to be drawn towards the pupil when he sits back to read. The 'St. Paul's' is fitted with castors. All these are box desks, in which there is provision for the storage of books beneath the writing board. The peculiar feature of the 'Globe' is an ingenious steel friction hinge, which allows the seat to be tilted up and replaced in silence, an advantage claimed also by the 'Canadian Automatic.' But both are double desks and possess the disadvantages attaching to that make.[1] The 'Burlington' and 'Girton' are merely writing boards supported upon frames, which fold up, so that the whole can be packed away in a narrow space, and neither allows for the storage of books.

(i) Single

In dual desks, such as the 'Farringdon' and the 'American,' several makers try to introduce one of the advantages of the single desk by providing separate seats. The slope of the 'Victor' is pivoted on brackets, which allow it to be pushed back to form a flat table or be drawn forward to act as a writing slope. In the 'Imperial,' 'Bennet,' 'Crown,' 'Cardiff,' 'Highgate,' and 'Holden' the writing board is split, so that the portion nearest the pupil may be thrown up to form a reading stand. The 'Bennet' and 'Cardiff' belong to the class of double desks, in which the seat-back of one desk supports the writing board of the next. A desk of this kind cannot be placed by itself without the loss of at least one other, of which it supplies a half.

(ii) Dual

Double desks

Kindergarten desks and tables constitute a class by themselves. The writing board is generally ruled in squares, and much attention is devoted to devices for enabling the children to stand for drill.

(iii) Kindergarten tables

I shall now touch on the peculiarities of some miscellaneous desks intended to economise space. 'Moss's Schoolboard' is a long desk with continuous seat and writing board split to form a reading slope. The 'Sheffield' is simply a long fixed writing slope without bookshelf, in which the seat back of one desk forms the standard for the slope of the one behind. The objection to this arrangement is intensified in

(iv) Miscellaneous

[1] See (ii) *infra*.

long desks by the fact that the inner pupils are absolutely inaccessible to the teacher for purposes of individual attention. The 'Osborne' and 'Stevenage' are merely writing slopes with a backless bench, in which the slope is supported by hinged brackets, so that it can be thrown over the bench, converting the desk into a backed seat. The 'Holborn,' also convertible, allows the top to be secured in a horizontal position, when, if two such desks are placed facing each other, the result is a flat dining table with benches attached. The two former have this advantage over the 'Holborn,' that desk and seat face the same way. The 'Phœnix,' 'Sovereign,' and 'Royal' are similar in principle. The 'Strand' is a long desk with separate chair-seats. The 'Manual Desk Bench' is an ingenious desk, which can be converted into a carpenter's bench with a locked tool chest and removable seat for manual instruction in joinery. The 'Centric' desk, by an ingeniously simple contrivance, adapts itself equally well to reading, writing, drawing, and drill. The examination desks are all very similar to the 'Burlington.' There is a great variety of drawing tables not differing materially in principle. Perhaps the most ingenious of all desks is the 'Adjustable Student's Desk.' The seat is a backless stool, that can be thrust under the desk, and the writing board, which can be tilted up for reading or drawing, is supported on cubical pillars running in vertical slots with adjustment screws, so that it can be raised to the height of a standing desk or fixed in any intermediate position. Little portable trestle tables are made for object lessons, and single desks may be had without seats to use with chairs. Lecture and laboratory tables with all necessary fittings for practical scientific work are generally built up in the room. Teachers' desks are made in great variety; but no educational principle is involved in their structure, which depends simply on the price, and we need not therefore describe them in detail. Such furniture should always contain a large number of pigeon holes and several shallow drawers, subdivided into small compartments, to allow a variety of small articles to be kept separately where any one can be reached without disturbing the others.

2. Cupboards, book-cases, and cabinets

For storing books, specimens, ink-wells, and other small articles in daily use every well-appointed school has cupboards, book-cases, and cabinets. Cupboards are sometimes fitted with shelves perforated to hold ink-wells. Book-cases should have glazed doors to exclude dust. The best specimen cabinets are long and shallow glazed boxes, which allow specimens to be inspected without removal.

Lockers for books, *i.e.* nests of boxes with falling lids, placed against walls are vastly superior to boxes under the writing slope of the desk, for the very important reason that forgetful pupils can reach their books without disturbing pupils in other classes. Box desks—especially those with open fronts—offer great facilities for illicit reading and playing. 'A school desk should be nothing but a support to facilitate reading and writing' and 'No books in the classroom except those in immediate use' are two excellent scholastic maxims. Every locker should have a separate key which will not open any other locker in the school. The upper rows should have lids hinged at the top; the lower rows, lids hinged at the bottom; and in both cases there should be *wooden* stops to relieve the strain on the hinge when the lid is thrown open. Chain stops are too easily removed.

3. Lockers

Round every fire-grate an iron guard, from three to four feet high, should be fixed so as to hook into eyes sunk in the wall on each side of the fire-place. Easily unfastened when the fire is laid, this attachment has just enough steadiness not to be a temptation to that crux of school management—the feeble brain that is incapable of foreseeing the consequence of senseless acts. In hat-pegs, bent wire should be avoided. However strong, wire *can* be bent. Wood can be cut. Cast iron pegs, fastened with long screws, are the most durable.

4. Fire-guards and hat-pegs

Stands of different kinds are indispensable for displaying maps, holding drawing models, objects for demonstration, and umbrellas. The 'Signal Mapholder,' on the semaphore principle, stores a number of maps and ingeniously displays them at arm's length. Stands for drawing models and objects are either small tables, pedestals, or stems, with wooden arms moving on a cup-and-ball joint with pointed ends, which fit into holes in the models and extend them in any desired position. The only point to be noted in umbrella stands is the necessity of having the tray, meant to receive the drippings in wet weather, made of some hard material. Zinc is too easily bent and pierced. Cast iron, if more expensive, would last very much longer. In the absence of such a desk as the 'Adjustable Student's Desk,' some form of reading-stand is very desirable to give the teacher relief from the sitting posture.

5. Stands

Easels are used to hold blackboards or drawing boards in a nearly upright position, while maps are suspended vertically on stands. In easels the height of the black-

6. Easels

board can be altered by means of pegs placed in holes, and some are fitted with an extending arrangement, like a T square, which can be raised to suspend large maps.

Among miscellaneous school requisites must be mentioned map hooks, pointers for map and blackboard work, pen, pencil and ink-well trays, ink-well fillers, gongs, chalk-boxes, blackboard brushes, rules, compasses, T and set squares, and thermometers. The best map hooks are those with three prongs, two of which curve upward close together. Pointers should be made of some wood more durable than deal. The best pen and pencil trays are those resembling the domestic knife tray. The spout of the ink-well filler should always be made of glass to show the progress of the ink stream. Gongs in which the knob can be struck with the open palm are preferable to those in which it is drawn or twisted with the fingers. Brushes of wood covered with felt or carpet stuff are very serviceable in removing the bulk of the chalk from blackboards, but a cloth duster is generally required to complete the cleaning. Wooden chalk compasses are invaluable for blackboard demonstration, as are large T squares, set squares, and rules for ruling lines and setting off perpendiculars and angles on the board.

7. Miscellaneous

The best pins for fastening paper to drawing boards are those with thick heads, bevelled so that they can be easily taken out with the finger nails. Slates are now bound with wire for strength; but many teachers taboo slates altogether as being dirty, difficult to clean, and hurtful to the eyesight, besides encouraging cramped work.

8. Drawing boards and pins; slates

Blackboards are made of several different materials—wood, slate, papier maché, composition, and glass. Of these, wood gives the least satisfactory surface, and it is very difficult to remove chalk from glass, which gives the best writing surface when first used. All require washing at intervals with soap and water. Space is gained by setting blackboards along the walls, but they cannot then be moved to suit different lights. They are generally best on easels. Those that swing on pivots in a frame are convenient for quick reversal, and those that slide in frames either laterally or vertically can be more easily adjusted in positions convenient for writing—a laborious process. Castors give the necessary mobility to the frame or stand. Special blackboards are made for teaching solid geometry and for objective demonstration, in which a portion of the board can be adjusted at right angles to the rest, and they may be ruled with staves for music, as in the Bi-

9. Blackboards

Notation blackboard. Flexible blackboards (made of composition upon cloth), like maps, may be had ruled in squares for demonstration drawing to scale.

10. Maps and diagrams

Little need be said about maps beyond noting that they should always be thickly coated with varnish to resist dust, atmospheric influences, and ink. There are blackboard, outline, blank, relief, and invisible blackboard maps. The first are white map outlines on a stiff or flexible blackened surface upon which details can be chalked. Blank maps show the position of places without names, so that knowledge acquired from a complete map may be tested by pointing to the nameless marks. Relief maps attempt to show solidly the undulations of the land surface, but are always delusive from the necessity of exaggerating the smaller undulations to make them appreciable. Invisible blackboard maps have the features so faintly drawn that the class cannot see them; but the teacher, standing closer, can do so and use the faint markings to guide his hand in sketching for the class any portion of the map required. Diagrams can be had to illustrate every department of knowledge. They are absolutely necessary in science teaching and cannot safely be dispensed with in any branch of instruction, the intensity of visual impression much exceeding that of impressions received through the ear.

11. Pictures

For the same reason pictures are a powerful instrument of instruction, and they are superior to diagrams in that they also cultivate taste and give pleasure; but, even in school, they should not be too obtrusively didactic. Taste and pleasure are subtle in their origin, and in their highest expression are nourished most by suggestion.[1]

12. Models

But it is necessary also to represent objects in the solid, and for this models are required. Drawing models are common in schools, but there should be models to show the details of astronomical phenomena, mechanical and anatomical structure, and geometrical shape. Many pupils are deficient in the faculty of imagining the solid upon the plane; and a more permanent impression can sometimes be obtained by handling the object itself.

13. Scientific aids

Among aids to scientific instruction I need do little more than name the globes, geodoscope, tellurian, orrery, selenotrope, planisphere, perspective glass frame, and graphic projector. The first are well-known aids in geography.

[1] Excellent pictures and photographs can be obtained at moderate prices from the Art for Schools Association.

They may be had with mechanical contrivances for showing the alternation and varying lengths of day and night, the succession of the seasons, and so forth. The geodoscope is a combined celestial and terrestrial globe, the earth being suspended in the centre of a hollow glass sphere representing the heavens. The tellurian shows the actual rotation of the earth accompanied by the moon round the sun, represented by a lighted candle or lamp, and illustrates such phenomena as eclipses, tides, perihelion, and aphelion. The selenotrope shows the phases of the moon. The orrery represents the whole solar system. The planisphere shows the principal stars visible in our latitudes for every hour in the year, with the variations of sunrise and sunset. The perspective glass plane demonstrates experimentally the laws of perspective. The graphic projector enables the plan, elevation, and sectional elevation of an object to be drawn with the planes of projection in their actual positions. It can then be flattened to show the appearance of the drawings when worked out upon a plane.

14. Elementary apparatus

Other apparatus used in elementary teaching—form and colour boxes, spelling and alphabet boxes, word-builders, the abacus, arithometer, clock faces with movable hands, and the French compendium—hardly come within the province of this book.

15. Notice boards

Notice boards should be covered with green baize, to which paper can be fixed with drawing-pins, and, if the board is enclosed in a glazed frame, the notices cannot be detached or soiled by mischievous fingers. A padlock on the glazed door makes it easy to post fresh notices at any time.

16. Platforms

Platforms are valuable for raising the teacher's point of view when sitting, so that he can look down upon the class and see better what each pupil is doing. If a school contains several, they should be planned to make a large stage when placed together on the occasion of public functions.

17. Copying machines

Copying machines are invaluable for multiplying examination and other papers. The copying press is useful when only one copy is required. The cyclostyle is tiring to the hand. The hectograph produces excellent results when attention is paid to temperature. It is not more tiring than ordinary writing, and requires no stencil. The mimeograph and cyclostyle are stencil machines, in which a gelatinised sheet is pierced by the type or a thorn-rimmed wheel, and ink forced by a rubber roller through the punctures on to a sheet of paper placed

below. In all these machines success depends almost entirely on the steady even pressure of the hand in writing the original and the amount of patient attention bestowed on the details of the process. Judgment is required too in modifying the exposure in warm and cold weather. In no case is the definition equal to that of print, but the effect is usually softer and in that sense more artistic.

18. Portable lavatory and lavatory taps

Lastly I will just mention the portable lavatories which are so useful where a room has not the necessary fittings. In lavatories the push spring tap is the only one that seems to offer any great resistance to the misdirected ingenuity of the lazy boy, who insists on fixing the handle. With this I close my list of educational aids. In doing so I would repeat once more that, while no one of them is either unnecessary or indispensable, the very best work can only be done with all.

WILLIAM K. HILL.

ORGANISATION AND CURRICULA IN GIRLS' SCHOOLS

Secondary Education of Girls not organised at all forty years ago

It is almost an educational commonplace to say that forty years ago the Secondary Education of Girls was not organised at all. There were schools of course, and some of them were schools in which that first of educational requisites, the training of character, was admirably attended to; and there were, here and there, governesses of remarkable attainments whose success with their pupils was gratefully acknowledged and appreciated; but these were exceptions, the ordinary level of teaching and attainment was very low, and could scarcely be expected to be otherwise, for any common method, common standard, or common educational tradition was wholly wanting.

First Beginnings; and the Foundation of High Schools

It is with the opening of two great schools—the Cheltenham Ladies' College, of which Miss Beale became the Principal in 1858, and the North London Collegiate School, under Miss Buss, which originated in a private school, opened in 1850 by Miss Buss and her mother in Camden Town—that the first real organisation of secondary schools for girls may be said to have begun. What the education of girls and of women owes to these two honoured names can never be computed; they were, more or less, the pioneers, the first who really set themselves to work out the new ideals of thoroughness, the new determination not to be content with imperfect achievement,[1] the new confidence in the hope of arriving at higher standards of attainment. But the provision of improved opportunities of secondary education for the girlhood of the United Kingdom could not be solved by establishing boarding-

[1] 'Be on your Guard against Imperfect Achievement.' This was the warning of one who wrote long before the days of High Schools, against the besetting danger of unmethodised endeavour. *Woman in her Social and Domestic Character*, by Mrs. John Sandford. (Longman, Rees & Co., 1831.)

schools on the model of our public schools for boys, and it is therefore rather in the North London Collegiate, which is primarily a day-school, than in the Ladies' College at Cheltenham, which is primarily a boarding-school, that the original outlines of that which is now known as the High School system must be looked for, though it cannot be doubted that the movement, speaking generally, owes as much to Miss Beale as it does to Miss Buss.

The Girls' Public Day School Company led the way in the foundation of large day-schools for girls both in London and the provinces; then came the Church Day School Company, and, side by side with these, numbers of small local companies for starting High Schools in single towns; and, best of all, the foundation of many true public schools,[1] on the same lines as the older schools for boys, where no question of paying dividends or earning a profit comes into view at all. But although I am sure that the right ideal of education demands that a school should be in no sense a commercial speculation, yet I am bound to admit that the foundation of a company was practically the only way in which it was possible to begin, on any sufficient scale, to supply what was needed; and the Girls' Public Day School Company has given a noble example of the manner in which such an association ought to be worked.

It was, I think, in the North London Collegiate School that the arrangement of hours now universal in all High Schools first began to be used. This arrangement has so emphatically proved its use and suitability by the manner in which it has spread from school to school, that I think some space must be devoted (1) to describing it, (2) to considering the reasons which have justified its adoption. For though circumstances may impose curricula which are far from being in harmony with the best educational ideals, organisation at least should always be able to give a reason for itself, and, indeed, a good organisation can really do very much to mitigate the evils of an overloaded curriculum.

Arrangement of Hours. Class teaching in the Morning only, five Mornings in the week

1. First, then, the invariable practice in all the schools of the Girls' Public Day School Company, and in almost all other High Schools is: *that class teaching is to be given in the morning only.* The afternoon is reserved (*a*) for preparation, either under the eye of a teacher or at home, (*b*) for individual lessons, such as Music

[1] The great City Companies have devoted large sums to this object. See *Education of Girls and Women*, by C. S. Bremner (Swan Sonnenschein & Co., 1897).

and Singing lessons, (*c*) for special lessons to single pupils or small groups, (*d*) in many schools Painting lessons and Drawing lessons, also Sewing lessons, and, if dancing is taught in connexion with the school, Dancing lessons, are given in the afternoon. Wherever there is a gymnasium, afternoons would be reserved for gymnastic exercises.

2. The School does not meet on Saturdays, which is, therefore, in the case of the younger pupils, a whole holiday. The elder pupils have generally a certain amount of work to do on Saturday mornings.

3. The morning is rather a long one, being from nine to one in some schools, from half-past nine to half-past one in others. There is always an interval of ten minutes or a quarter of an hour in the middle of the morning, during which most of the pupils make compensation for their early breakfast by taking a glass of milk with a biscuit or a bun.

4. There are usually five lessons given in each morning, and the average length of each lesson is from 40 to 45 minutes. There are Drawing lessons which last an hour and twenty minutes, and Drilling lessons of 15 minutes only, but 40 to 45 minutes is the rule. Experience seems to teach us that, for growing girls, the last 15 minutes of an hour's lesson is simply time thrown away. The young minds are tired, and nothing but a change of subject, and, if possible, a change of teacher, will refresh them. It is not till we come to the Upper Fifth and to the Sixth Forms that we reach the stage when the longer lesson is both desired and appreciated.

The following are examples of an ordinary morning in a school opening at 9 A.M.

9 to 9.10. Prayers and Calling over. When Calling over is done in the Class Rooms by the Form Mistresses, it takes very little time.

Alternative Arrangements

First lesson	9.10 to 10	9.10 to 9.50	9.10 to 9.50
Second lesson	10 ,, 10.40	9.50 ,, 10.30	9.50 ,, 10.30
Third lesson	10.40 ,, 11.20	10.30 ,, 11.15	10.30 ,, 11.20
Recreation	11.20 ,, 11.30	11.15 ,, 11.30	11.20 ,, 11.30
Fourth lesson	11.30 ,, 12.10	11.30 ,, 12	11.30 ,, 12.50
Fifth lesson	12.10 ,, 12.50	12 ,, 12.50	(Drawing lesson)
Taking of marks, &c.	12.50 ,, 1	12.50 ,, 1	12.50 to 1

It is scarcely necessary to point out how this arrangement of hours can be varied. Probably there are slight daily differences on every one of the five school days. The Headmistress of the Oxford

High School[1] has pointed out, in her little paper on School Work, that, if half an hour a day be subtracted for Prayers, Calling over, and Recreation, only 17½ hours are left for actual teaching, and this, when compared with the longer time-tables of boys' schools, seems very little. Yet in practice it is not found inadequate; and that it is the outside limit of what can be wisely required, is proved by the fact that whilst there is, I suppose, never a term in which some mother does not ask that her daughter's lessons may be reduced, neither mothers nor fathers ever dream of requesting that they may be made longer. In the case of the boys, parents may accept longer hours and a harder strain, when they believe their son's whole career may depend on his passing certain examinations. If his health be injured they will be very sorry, but they see no way of avoiding the risk. In the case of their girls, they are determined, and, in my opinion, rightly determined, that their health shall not be risked. They are pleased when they pass examinations, and pass them well; but it is only in rare cases, and for special reasons, that they urge, or would even permit, any real strain to be put upon their girls to make them pass *anything*. Most headmistresses thoroughly understand, and many of them enter into and share this point of view; but the eminent headmistresses who have been the leaders of the High School movement were also rightly convinced that by methodical arrangement, not only of time but of subjects, the very best results might yet be arrived at; and, far from resigning themselves to be 'content with imperfect achievement,' they were determined to aim at giving the girls an education which should be in no way inferior to that received by their brothers, and which, allowing for the differences implied in the training of girls to be women and of boys to be men, should show itself to be so when tried by the same tests.

The bearings of this plan upon Health and Education

Part of the problem that had to be solved when the first High Schools were founded, was how to offer the advantages of a solid and reliable school education, without taking girls too much away from their homes. Parents scarcely need Pestalozzi to teach them that, in early education, nothing can be compared—for girls, if not for boys—with a mother's influence; and all teachers know that the home training of a good mother is a preparation which sends the child to school ready to profit to

How the plan favours the wish of many parents to keep their girls at home, and yet not to let them miss the advantage of a Liberal Education

[1] *Stray Thoughts for Teachers*, by Miss Soulsby. James Parker & Co., 1893.

the utmost, and in the best manner, by all that the school can give. It cannot be repeated too often that the first and the last word of a good education is spoken at home; and where the foundations that should be laid at home are wanting, teachers can only make very imperfect endeavours to supply their place. Now 'High School Hours,' as they are often called, give a very large choice to parents as to the time their children shall actually spend at school; and, in many High Schools, quite half the pupils do not return except for Music lessons or for special Classes. Of course the decision rests not with the pupils but with the parents. All that is required is that a certain definite time, as indicated in a Home Time-table, which is sent to the parent, shall be spent in the preparation of their lessons, but the hour at which the work shall be done is controlled only by such rules as may be made against sitting up at night. The amount of preparation required is from an hour to an hour and a half from the Lower School; from an hour and a half to two hours from the Middle School, and from two to three hours from the Upper School. As a rule, when the home is near, or the trains convenient, the girls of the Lower and Middle Forms return to do their work under supervision, but the Upper School for the most part likes best to work at home. In some cases, where a mother is much occupied and yet prefers to keep her girls at home in the afternoon, I have known 'afternoon governesses' engaged to fetch girls from school, walk with them, preside at their preparation, &c. This is a plan which combines very well with High School education.

Total of hours of Work (a) in the Lower School

It will have been seen that the morning hours and the time allotted for preparation, added together, make a total of from five to seven hours a day, according to age. But, in reality, besides this, music has almost always to be reckoned for, and it would not be reasonable to ignore the fact that from three-quarters of an hour to an hour a day for practice, and from half an hour to an hour a week for music-lessons must usually be added to the working hours of the week. The total for an ordinary High School Girl would be, in the Lower School:

	Form I.	Form II.
Morning hours during which direct instruction is received	20	20
Preparation	5	7½
Music lessons (2)	1	1
Music practice	4½	6
Weekly total	30½	34½

Most headmistresses of experience will consider this quite as much as should be required of the average child of from eight to eleven years of age. Under eight years old no afternoon preparation at all would be permitted. Only about half the morning would be devoted to work that makes any serious demand upon undeveloped faculties, and the forty to forty-five minute lessons would be broken into two parts for the younger children. Even without counting the interval allowed for recreation, Drill and Needlework, Drawing and Singing, offer plenty of opportunity for insuring that no long-continued strain upon the attention shall ever occur.

(b) in the Middle School

In the Middle School, in addition to the above, one afternoon a week would probably be devoted to Drawing or the Gymnasium, and there might be some increase in the time allotted for preparation, making a total of about thirty-seven hours a week (music included).

(c) in the Upper School

In the Upper School, besides one afternoon devoted to Painting or the Gymnasium, there will almost always be another afternoon partly occupied with extra lessons in French, German, Latin, or Mathematics. Also a larger amount of preparation is demanded, so that an Upper School Girl (learning Music) might have to find space in her life for from forty-three to forty-five hours' work in a week, or a little over seven hours a day.

Careful consideration given to health

It will, I think, be a surprise to some people to learn how carefully health is considered, both with reference to the school as a whole, and to the special needs of individual pupils, in every well-organised High School; because High School methods have been so successful, and the progress of many of the pupils so remarkable, that it is almost taken for granted that the girls must have been overworked, and that the instruction must have been of the kind usually stigmatised as 'cram.' Justice is scarcely done to the immense pains taken by most headmistresses to guard against overwork, and to watch the health of their pupils.

Few schools can show a more brilliant record of attainment and success than the Sheffield High School for Girls (G.P.D.S.C.), which numbers over 350 pupils; yet there are few schools, whether large or small, in which there is a better standard of physical vigour, and in which the general and individual health of the pupils receives such constant and scientific care. It possesses[1] a

[1] Like all good High Schools, whenever the land can be obtained.

spacious recreation ground, where lawn-tennis, cricket, and other outdoor games are played every fine afternoon, and it has, besides a gymnasium of its own. But, more than this, a certificate of health is required from each pupil, on entering the school, in which all the leading details of physical development, such as height, weight, condition of eyesight, chest measurement, &c., are set down. The particulars are entered in a book, and these records are constantly studied and compared and acted upon, in the daily management of the school. Many a pupil receives a special time-table, because her weight is not what it ought to be, or is put through a carefully graduated course of exercises in drill to improve the width of a chest which the measurements show to be lamentably narrow.[1] Rapid growth is always considered, and sometimes all preparation will be remitted for months together, or even for a whole year, in cases where the strength seems to require it.

The accompanying copy of the Form of the Physical Record used in the school mentioned, will interest some readers (see opposite).

Bearing of High School Hours on the Work of Assistant Mistresses

In giving precedence to the subject of health, I have only followed out the conviction which has almost been raised into a dogma in the minds of many, that a due recognition of the bodily needs of the growing girl must be fundamental in all our schemes of instruction. It is, however, now time to speak of the studies themselves and of the manner in which teaching is given. And here I must notice, at the very outset, an educational advantage which is gained from the plan of giving all the principal teaching in the morning. Where the hours are short, it is very necessary to make the most of them, and in a High School every assistant mistress is expected (*a*) to prepare her lessons with persevering care, (*b*) to keep an exact register of the work of all those whom she teaches, (*c*) to correct and mark all exercises strictly and neatly, making every correction in red ink. All this takes a good deal of time, and could not justly be expected of teachers who always spend the whole day in school. But by High School arrangements fewer teachers are required in the afternoon, and every assistant mistress should be able to get free time on two afternoons in the week at least, besides the whole holiday on Saturday. Fresh air and exercise are as needful for teachers as they are for pupils, and

[1] As in the North London Collegiate School, the measurements are taken by a lady M.D.

the elasticity of the afternoon requirements makes a very fair measure of these attainable in girls' schools worked on the High School plan, for on their 'off' days teachers can do their correc-

NAME ..... No. .....

ENTERED SCHOOL ..... LEFT SCHOOL .....

		Date	Date	Date	Date
Age Height Weight					
Sight	Right Left Colours Glasses				
Hearing	Right Left				
Throat, &c. Breathing					
Lungs Heart					
Chest Measure Waist Measure	(over Stays)				
Chest Formation Spine Muscles Arch of Foot					
Development					
Remarks					
Advice					

tions or prepare their lessons either in the afternoon or evening, whichever they prefer. It is true that the 'overworked High School mistress' is a personage frequently mentioned, but, in my opinion, she ought not to exist. Where she does exist, it is either because she chances to be one of those unfortunate beings of whom Bacon says that they have 'no despatch,' or else she works in a school that is under-staffed, or has a headmistress that does not know how to construct a time-table.

The most ordinary arrangement is to require each of the senior assistant mistresses in turn to be Mistress in Charge for the day, which, of course, includes superintendence of the afternoon preparation of all the older pupils, whilst another mistress takes Afternoon Charge under her in the Lower School. This very often comes only once a week; never, I think, oftener than twice a week. By Senior Mistresses who are specialists a second afternoon may be devoted to special work with individual pupils, or with small classes or groups. Drawing lessons, Sewing lessons, and Gymnastics, also have to be provided for, and there are always some mistresses who make it their particular business to take an interest in the games.

Another point which may be mentioned here is that the young assistant mistress at 80*l.* a year who is described as living a poverty-stricken life alone in lodgings, is scarcely to be met with in connexion with any well-regulated High School. Assistant mistresses are generally quite capable of bringing their cleverness and good sense to bear on the arrangement of their own lives, and there is much to admire in the manner in which they create homes for themselves, where the maximum of comfort is combined with the minimum of expense. To mention instances: in my own school only one (senior) assistant mistress lives in lodgings; of the others, one has a small but very successful boarding house in connexion with the school, where the French mistress lives with her; three others live in their own homes, and the rest are also comfortably settled. There is an excellent boarding house for assistant mistresses in connexion with the Worcester High School, and another in connexion with the Salisbury High School. At Sheffield, out of twenty assistant mistresses only two live in lodgings, and these are not young beginners at 80*l.* a year. For the most part they live together in little groups, varying from three to five, in small houses of their own, within ten minutes' walk of the High School. Of the London customs I cannot speak with personal knowledge, but an old pupil of mine has for many years made one

of a similar group, inhabiting a house in connexion with the North London Collegiate School, and though she has taught in London for a long while, I do not think she has ever lived alone in lodgings.

It is not in girls' schools only that the main difficulty of the curriculum is to find time and space for the multiplicity of subjects which must of necessity be included in the school course; and although this difficulty can scarcely be said to be approached in the lower school, it is mainly upon the manner in which the years between eight and twelve have been used, that final success in dealing with it depends.

School time-tables (a) in the Lower School

Religious instruction of the simplest kind, the elements of Arithmetic and Grammar, some general notions of History and Geography, conveyed through easy Reading-books which give practice in reading at the same time, Dictation and Spelling very frequently, and a French lesson every day—these are the more serious studies of a First Form time-table, and they are so intermingled with Physical Exercises, Drawing, Singing, Brush Painting, Sewing, &c. that the little ones do not get wearied, though a real, if short, demand for effort and attention is made at repeated intervals. French, in the First Form, is almost always taught by a foreigner, to secure good pronunciation at the very outset, Drawing and Brush Painting by an Art Mistress, and Drill by a trained Instructress, whilst all other subjects would most probably be entrusted to the Form-Mistress. Thus, almost every other lesson there would be a change of teacher, and this variety, which is frequently carried right through High School teaching from the bottom upwards, not only acts as a relief, bringing a sense of freshness both to pupils and teachers, but it also affords a valuable means for making pupils and teachers acquainted with one another, not in their own forms only, but throughout the school. This mutual and personal acquaintance seems to me of so much value educationally that, in my own school, I have long been in the habit of giving at least one lesson weekly during *some* term in every year, occasionally, when it seems desirable, in all three terms, in each of the lower and middle forms in my school; and I know there are other Headmistresses who do the same thing.

Educational Value of the Alternation of Teachers

Some of the gravest difficulties of High School education come upon us in the middle forms. Those who have passed through the Lower School are, as a rule, quite ready to enter upon the next stage of progress; to begin the second language

—either Latin or German—to take the first steps in Geometry or Algebra. But a great many pupils of thirteen and upwards are sent to us in so backward and ignorant a condition that it is a constant perplexity how to classify them; and it not unfrequently happens that their want of grounding can never be made good, but remains a perpetual stumblingblock all through their school career. It would be contrary to High School principles to reject such scholars. On the contrary, they are to be welcomed, and it is a duty to do the best that can be done for their education; but it is plain that this can only be carried out by considering each case individually, and many are the separate time-tables that have to be made out to meet these requirements. In some large Schools there are supplementary forms into which such scholars are drafted for a time; in the smaller schools all that can be done is to place them wherever they seem likely to get on best, and give supplementary teaching in their weakest subjects. And this kind of instruction is so fully recognised as a part of the work, that every Headmistress would allow for it, and give it a place, in distributing the work of her staff. Where there are Student-teachers they can often be employed in taking charge, under due supervision, of little groups of two or three, or even of single girls, for some one particular subject in which they need individual coaching. Perhaps the only serious cases of overwork that occur are those that arise out of the vehement determination of a certain type of girl to attain to the proper level of her age, when, through comparison with others, she discovers her own backwardness. It may be that she has some special reason for wishing to pass a particular examination, and she finds she has to work twice as hard as anyone else, and to subject herself to a strain which may be very bad for her health, simply and solely because she did not learn the elements at the proper period.

School time-tables (b) in the Middle School

Difficulties of Classification

It is in the middle forms that time-tables begin to differentiate a little, according to the preferences and views of the various Headmistresses. In some schools what are called English subjects, such as Grammar, Geography, History and Literature, are given a larger proportion of time than they get elsewhere. Other schools teach a third language, or give more time to Latin. Others, again, make a very great point of Mathematics and Science.

The following summaries of suggested time-tables will illustrate this:

A	Number of lessons	Time	B	Number of lessons	Time
		h. m.			h. m.
Religious instruction	2	1 30	Religious Instruction	2	1 20
Arithmetic	3	1 70	Arithmetic	3	1 70
French	4	2 45	French	3	1 70
Latin	4	3	German or Latin	2	1 30
German	2	1 30	Preparatory Geometry or Algebra	1	40
Preparatory Geometry or Algebra	1	45	Physical and Political Geography or Map-drawing	2	1 20
English Grammar, Dictation, History, and Recitation	5	3	Botany	1	40
Geography	1	40	English Literature or Recitation, English Grammar, Dictation	3	1 60
Botany	1	45	English History	1	40
Physical Exercises	3	45	Ancient History	1	40
Class Singing	1	40	Class Singing	1	40
Drawing and Sewing in the afternoon	—	—	Drawing	1	1 20
			Sewing	1	1 20
			Physical Exercises	2	1
		17 30			17 30

School time-tables (c) in the Upper School

The following time-tables are examples of the actual work of an Upper School Form in two different High Schools. Fifth Form time-tables have been selected, because in the Sixth Form there is always so much specialisation. It should, perhaps, be observed, that in Languages and Mathematics all, or almost all, the work in the Upper School is taken in sets, or divisions.

C	Number of lessons	Time	D	Number of lessons	Time
		h. m.			h. m.
Religious Instruction	2	1 25	Religious Instruction	2	1 20
Arithmetic	2	1 25	Arithmetic or Trigonometry in sets	2	1 20
French	3	2 10	French	4	2 40
German or Latin	3	2 10	German or Latin	4	2 40
Euclid	2	1 25	Euclid or Mechanics in sets	2	1 20
Algebra	2	1 25	Algebra	2	1 20
English language or extra Latin	1	45	English Literature	2	1 20
English Literature	1	45	English History	2	1 20
English History	2	1 25	Science	2	1 30
Science	2	1 20	Geography or Grammar	1	40
Geography	1	45	Singing	1	1
Drawing	1	1 20	Physical Exercises	4	1
Singing	1	40			
Drill, one or two	—	30			
		17 30			17 30
Some extra lessons in the afternoon			Drawing, Painting, and Gymnastics in the afternoon		

Such time-tables are, of course, open to continual modifications. In most schools Drawing in the morning is almost compulsory, because pupils who come long distances, and by train, cannot be depended on for afternoon attendance. Also there are, as has been said, so many cases in which mothers prefer to send their daughters only in the morning. But, in the Upper School, there is, almost always, an alternative lesson in Mathematics, Science, or Latin, for pupils who are taking advanced work, or for backward pupils needing special help.

Possible modifications

This, too, would be the right place for an occasional course of lessons on Book-keeping or Shorthand; but the introduction of these subjects is distrusted by some as being of too technical a nature to be legitimately within the programme of Schools of the first grade. In my own opinion they are neither more nor less technical than the lessons on Interest and Stocks which occupy whole terms, and I have known cases, in very various social grades, where the services of daughters who can give intelligent aid in keeping accounts are not unappreciated. In my own school, long before I thought I could see my way to teaching Book-keeping, I had begun to form occasional classes, especially for those pupils who did not learn Latin or the second foreign language, in a subject for which I invented the name of Practical Economics. Under this head I gave lessons in a very simple plan for keeping household accounts, with easy explanations of the chief items of general expenditure; tried to make young minds understand the difference between rates and taxes, and the still more important difference between capital and income; and endeavoured to explain the moral principles which should govern all expenditure. Very likely such lessons are given in many High Schools.[1] I have called them *occasional*, because I have no desire to claim a permanent place on the time-table for this kind of teaching; a course extending over one or two terms, and given biennially, is quite enough to secure a possibility of giving a sufficient measure of this sort of instruction at some time or other in the school career of almost all those pupils for whom we feel it to be practicable and desirable.

Practical Economics

It seems to me that in every time-table there ought to be a certain margin for supplementary courses, and sometimes these can be introduced quite easily in the first term of the school year by the interpolation of a few special lessons into the general plan

[1] I have heard that lessons of a very similar nature have been given in the Manchester High School.

of instruction. In History, for instance, all teachers must regret the almost complete neglect of continental history imposed by the inexorable time-limits within which we have to arrange our lessons. But it is surprising what even a short course may do towards making pupils feel that there *is* a history of the world of which the history of England is but a part, and if this excites interest, and gives knowledge enough to stimulate private reading, we have done a work which is well worth doing.

Thus I have myself given occasional courses of from six to ten lessons in the Upper Forms, on such subjects as the Fall of the Roman Empire, Feudal Europe, the Renaissance, or the French Revolution, as a substitute for one of the lessons on English History during one of the three terms in the year. Whatever may be our desire not to be superficial, it is difficult to see how the teaching of any particular period of the history of our own country can be put into anything like perspective unless some attention is paid to providing it with its proper background.

I know of one High School where, once a fortnight, a lesson is given in what is called 'Newspaper Geography,' in which any part of the world upon which contemporary attention chances to be fixed forms the subject brought before the class.

Newspaper Geography

With our crowded programme it is difficult to make room for this sort of general culture, but we are often encouraged by tokens that it is well worth while to persevere in such attempts.

Some may perhaps think that in a paper upon the organisation and curricula of girls' schools in general, I have said too much about High Schools in particular. But, the truth is, that in numbers, enterprise, and enthusiasm, High Schools have for a long while led the way, most of the best private schools have more or less assimilated their methods; indeed the very name is frequently adopted where there is little warrant for assuming it. For a High School, I suppose, might be defined to mean a First Grade Secondary School for Girls which sends some proportion of its pupils to the Universities.

Conclusion—by a summary of the ideals and principles of High School organisation

Forty years ago, girls' schools cannot be said to have had any traditions, and the feeling of affection and loyalty which boys entertain for their public schools was quite unknown to their sisters. But it is not so now. A great revolution has been, and is

being, silently effected, and it is of vital importance that it should be conducted on the right lines. I cannot, I think, better conclude this chapter than by a short summary of the ideals and principles of High School organisation, such as I believe them to be and have endeavoured to set them forth in this paper, and such as I have myself seen in operation during more than twenty years of fairly intimate acquaintance with the practical working of the High School system.

The great corner stones upon which the educational edifice may be said to stand 'four-square, to all the winds that blow,' are, I think, to be enumerated as follows:

The four corner stones

The leading principle of a good education is equipment, perfect equipment, for the duties and responsibilities of manhood or womanhood, whichever it may be. We believe that such an education must rest, in the first place, on a strongly laid foundation of religious principle,[1] as the one trustworthy basis of upright conduct, gentle manners, and of that quick feeling of honour, which Wordsworth has defined to be 'the finest sense of justice that we know.'

1. A foundation of religious principle

Next in importance to religious principle comes bodily health. I have shown what, in a well-conducted High School, is the care and attention paid to the physical side of education. It may be that much of the gaiety and cheerfulness which is so often noticed as a characteristic of High School life may be partly due to the unceasing endeavour to bring every detail of organisation into conformity with the laws of health, and to make the promotion of physical well-being a continual study.

2. Well-considered and alert attention to physical requirements

The third corner stone is the maintenance of a complete and well-adapted plan of instruction, given by well-qualified teachers. Stedfast *thoroughness* in the acquisition of knowledge and the training of faculty is to be aimed at. Even in directions where only a beginning can be made, the ideal is that every step, however elementary, must be a sound one and lead solidly up to the next. A 'want of thoroughness and foundation' was the leading defect specially observed and pointed out in the report of the Schools Inquiry Commission upon Girls' Schools; so good grounding, method, system, thoroughness, have been aims kept continually in view in

3. Good instruction, given by teachers of proved competency

[1] 'The fear of the Lord is the *beginning* of wisdom.'

the great work of bringing the secondary education of girls up to higher standards and larger measures of value.

And last, but not least, amongst the four underlying principles of all true High School education, is to be reckoned a constant reliance on the co-operation of parents. The responsibility for their daughters' education is theirs in the first instance, and this is never to be ignored. 'It is a great pleasure,' writes Miss Soulsby, 'when parents do not simply hand their children over to us to do our best with, but themselves enter into what we are doing and work with us. . . .' There is not space to speak here of the various methods employed to keep parents in touch with the school life of their daughters. I will mention one only—the adoption, in many High Schools, of some system of marks which acts, almost automatically, as a weekly record. The system I use myself is one in which the average of the marks is taken weekly by the Form-mistress. The highest average that can be obtained is 50; to be over 40 counts as an Honour Week; to be below 35 means idleness or neglect of some kind, and is dealt with accordingly. For, of the two marks given for each lesson, the first is given for the actual quality of the work, and the second for the manner in which it has been done. The industrious endeavours of a pupil of slow mental capacity can always be recognised in the second mark. This system of marking is soon understood by parents, and I find them most grateful for the easy possibility of noticing improvement or of becoming aware when a little careful observation or a word of warning is needed. It is of use to the Headmistress herself in giving her the means of judging by a glance at the record which hangs on the notice-board, whether not only the individual Pupil but the individual Form is doing ill or well; and even for the pupils it is useful in revealing to each one exactly where she stands and what she is doing, in relation to the general standard of the school.

4. A continual endeavour to keep in touch with parents, as those who are primarily responsible for the child

No doubt it will be said that such an ideal as has been described, if it is indeed the High School ideal, is often very imperfectly carried out. This is, I fear, true of all ideals. Yet the best schools are ever those where the aim is highest, and I could myself name at least half a dozen headmistresses whom I know personally, and whom I believe to have been working steadily for many years with these very ideals in view. I cannot doubt that there are a

'Who aims at the sky, shoots higher far than he that means a tree'[1]

[1] George Herbert.

multitude of others, both headmistresses and assistant mistresses, who are, and always have been, doing precisely the same thing; but more than this, the time has now come when we can confidently appeal to a very large body of young Englishwomen—some of them now actually beginning to send their daughters into the same schools to which they themselves were sent in their own girlhood, who remember, with grateful appreciation, what the traditions and principles were that governed the life of the High Schools in which they were educated, and who would, if called upon, bear almost unanimous testimony, that the true High School ideal, such as they have known it, is just what I have described and nothing lower

M. E. SANDFORD.

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